22nd Annual Logistics Conference & Exhibition

"Dynamic Logistics to Meet Evolving Threats"

17-20 April 2006

Miami, Florida

Agenda

Panel: *Logistics in the Quadrennial Defense Review 2006*
• **Chair**: Mr. Jim Hall, Acting Assistant Deputy Under Secretary of Defense, L&MR, Logistics Plans and Programs
• Maj Gen Loren M. Reno, USAF, Vice Director, Defense Logistics Agency
• BG Robert M. Radin, Deputy Chief of Staff, Operations / G3, Army Materiel Command

Panel: *Sustainment Science and Technology*
• **Co-Chair**: RADM Lenn Vincent, SC, USN (Ret), Defense Acquisition University, NDIA Industry Chair, Defense Acquisition University
• **Co-Chair**: Mr. Joe Grosson, Corporate Director of Logistics, Lockheed Martin
• Dr. Piero P. Bonissone, Industrial AI Lab, GE Global Research
• MG Dennis Jackson, USA (Ret), Director, Logistics Transformation, Oak Ridge Laboratories

Panel: *Joint Logistics Leadership Fireside Chat*
• LTG Ann Dunwoody, USA, Deputy Chief of Staff, G4
• VADM Keith W. Lippert, SC, USN, Director, Defense Logistics Agency
• LTG C.V. Christianson, USA, Director of Logistics, J4, The Joint Staff
• RADM Alan S. Thompson, SC, USN, Director, Supply, Ordance & Logistics Operations

Panel: *Multi-National Logistics Transformation*
• **Chair**: Mr. John J. Erb, Deputy Director for Strategic Logistics, J4, The Joint Staff
• Air Vice Marshal Kevin Leeson, Assistant Chief of the Defence Staff (Logistics Operations), United Kingdom
• Air Commodore Margaret Staib, Director General Strategic Logistics, Headquarters Joint Logistics Command, Australia
• Colonel Mike Boomer, Chief of Staff for J4 Materiel, Ministry of Defence, Canada

Panel: *Network Centric Logistics Operations - Industry Perspective*
• LTG Charles Mahan, USA (Ret), Vice President, SAP

22nd Annual National Logistics Conference & Exhibition

"Dynamic Logistics to Meet Evolving Threats"

Hyatt Regency Miami

Miami, Florida

April 17 - 20, 2006

Conference Brochure

NATIONAL DEFENSE INDUSTRIAL ASSOCIATION

STRENGTH THROUGH INDUSTRY & TECHNOLOGY

Schedule

Monday, April 17, 2006

11:00am-3:00pm On-site Registration

12:00pm-6:00pm Exhibitor Move in - Riverfront Hall

1:00pm Golf Outing - Be sure to check in at Registration prior to departure

Tuesday, April 18, 2006

7:00am-7:30pm Registration

7:00am Continental Breakfast

8:00am Conference Welcome & Overview
RADM James P. Davidson, SC, USN (Ret), Chair, NDIA Logistics Management Division

8:10am NDIA Welcome
Lt Gen Lawrence Farrell, Jr., USAF (Ret), President and CEO, NDIA

8:15am **Government Keynote**
Hon Jack Bell, Deputy Under Secretary of Defense for Logistics & Materiel Readiness

9:00am **Industry Keynote**
Mr. Thomas Culligan, Executive Vice President, Business Development, Raytheon Company and CEO, Raytheon International

9:45am Break in Exhibit Hall

10:15am **Panel:** Logistics in the Quadrennial Defense Review 2006
Chair: Mr. Jim Hall, Acting Assistant Deputy Under Secretary of Defense, L&MR, Logistics Plans and Programs
Speakers:
- Mr. David Dacquino, Vice President, System and Product Support Solutions, Raytheon Company
- Mr. David Pauling, Assistant Deputy Under Secretary of Defense L&MR, Material Readiness & Maintenance Policy
- Maj Gen Loren M. Reno, USAF, Vice Director, Defense Logistics Agency
- BG Robert M. Radin, Deputy Chief of Staff, Operations / G3, Army Materiel Command

11:45am **Luncheon Speaker:**
Gen Norton A. Schwartz, USAF, Commander, USTRANSCOM

1:30pm-2:30pm Exhibit Hall Visit

2:30pm **Panel:** Sustainment Science and Technology
Co-Chair: RADM Lenn Vincent, SC, USN (Ret), Defense Acquisition University, NDIA Industry Chair, Defense Acquisition University
Co-Chair: Mr. Joe Grosson, Corporate Director of Logistics, Lockheed Martin
Speakers:
- Dr. Bob Cranwell, Manager, Sandia National Laboratories
- Dr. Anil Varma, Manager, Service Logarithms Lab, General Electric Global Research
- MG Dennis Jackson, USA (Ret), Director, Logistics Transformation, Oak Ridge Laboratories

3:30pm Break in Exhibit Hall

4:00pm **Panel:** Achieving Supply Chain Asset Visibility and Accountability…RFID and UID
Chair: Mr. Alan Estevez, Assistant Deputy Under Secretary of Defense, L&MR, Supply Chain Integration
Speakers:
- LTG Pete Cuviello, USA (Ret), Vice President, Focused Logistics, Lockheed Martin
- Ms. Patricia Young, Deputy to the Commander, Surface Deployment and Distribution Command
- RDML Mark F. Heinrich, USN, Commander, Defense Supply Center Richmond
- Mr. William "Bill" Kenwell, Vice President, Sales and Marketing, Maersk

5:30pm-7:30pm Reception in Exhibit Hall

Wednesday, April 19, 2006

7:00am-5:30pm Registration

7:00am Continental Breakfast in Exhibit Hall

8:00am **Keynote:**
LTG C.V. Christianson, USA, Director of Logistics, J4, The Joint Staff

8:45am Break

9:00am **Panel:** Joint Logistics Leadership Fireside Chat
Chair: VADM Gordon H. Holder, USN (Ret), Principal, Booz Allen Hamilton
Speakers:
- VADM Justin "Dan" D. McCarthy, SC, USN, Deputy Chief Naval Operations Fleet Readiness & Logistics
- Lt Gen Donald J. Wetekam, USAF, Deputy Chief of Staff, Installations and Logistics
- LtGen Richard S. Kramlich, USMC, Deputy Commandant, Installations and Logistics
- LTG Ann Dunwoody, USA, Deputy Chief of Staff, G4
- VADM Keith W. Lippert, SC, USN, Director, Defense Logistics Agency
- LTG C.V. Christianson, USA, Director of Logistics, J4, The Joint Staff
- LTG Robert Dail, USA, Deputy Commander, USTRANSCOM

11:30am Luncheon Awards Ceremony
- Greer Award
- The Logistician Emeritus Award

1:15pm-2:15pm Exhibit Hall Visit

2:15pm **Panel:** Evolving Role of DoD Logistics in Disaster Response
Co-Chair: RADM Steve W. Maas, SC, USN, J4, NORTHCOM
Co-Chair: Mr. Jed Shapiro, CEO, Stonepath Logistics Government Services, Stonepath Logistics
Speakers:
- Mr. Michael G. Ritchie, Director, DoD Homeland Defense Coordination Office
- Mr. Larry Glasco, Director, Customer Operations and Readiness J4, Defense Logistics Agency
- Brig Gen Paul J. Selva, USAF, J3, USTRANSCOM

3:30pm Break in Exhibit Hall

4:00pm **Panel:** Multi-National Logistics Transformation
Chair: Mr. John J. Erb, Deputy Director for Strategic Logistics, J4, The Joint Staff
Speakers:
- Air Vice Marshal Kevin Leeson, Assistant Chief of the Defence Staff (Logistics Operations), United Kingdom
- Air Commodore Margaret Staib, Director General Strategic Logistics, Headquarters Joint Logistics Command, Australia
- Colonel Mike Boomer, Chief of Staff for J4 Materiel, Ministry of Defence, Canada

6:30pm-10:30pm Dinner Boat Cruise - Departs from the Hyatt Riverwalk promptly at 6:30pm

Thursday April 20, 2006

7:00am-11:30am Registration

7:00am Continental Breakfast

8:00am **Keynotes**
- Mr. Paul Brinkley, Deputy Under Secretary of Defense, Business Transformation (AT&L)
- Mr. Thomas Modly, Deputy Under Secretary of Defense, Financial Management (Comptroller)

8:45am **Panel:** Network Centric Logistics Operations - Industry Perspective
Chair: Mr. Pete Eltringham, Director, Business Development, Telos Corporation
Speakers:
- LTG Charles Mahan, USA (Ret), Vice President, SAP
- Mr. Eric Stange, President, Defense and Homeland Security, Accenture
- Dr. Leanne Viera, Service Area Leader for Supply Chain Strategy, IBM Business Consulting Services
- LTG Dan Brown, USA (Ret), CSC Defense Group

9:45am Break

10:15am **Panel:** Network Centric Logistics Operations - Government Perspective
Chair: Mr. Pete Eltringham, Director, Business Development, Telos Corporation
Speakers:
- Mr. Allen Banghart, Director of Transformation, DLA
- Ms. Virginia Williamson, J6, USTRANSCOM
- Ms. Diann McCoy, DISA Acquisition Executive, DISA

11:15am **Panel:** Network Centric Logistics Operations Panels Combined Question and Answer Period

11:45am Closing Comments
- RADM James P. Davidson, SC, USN (Ret), Chair NDIA Logistics Management Division

See you again next year here at the Hyatt Regency Miami March 19-22, 2007

"The Department of Defense finds this event meets the minimum regulatory standards for attendance by DoD employees. This finding does not constitute a blanket approval or endorsement for attendance. Individual DoD component commands or organizations are responsible for approving attendance of its DoD employees based on mission requirements and DoD regulations."

The Edward M. Greer Award

The Greer Award is presented annually to an industry individual in recognition of noteworthy contributions or meritorious service to the Department of Defense in the area of integrated logistics support engineering and its implementation in maintenance and product support. The award was established in 1956 by Greer Hydraulics, Inc., to stimulate thought and develop programs which will benefit industry and the public. The award program encourages solutions to troublesome maintenance problems or to the development of integrated logistics support planning techniques to be employed in their solution. The award is presented in honor of its originator, Edward M. Greer.

Past Edward M. Greer Award Winners

2004-David Spong, Boeing Integrated Defense Systems
2003-Hyman L. Shulman, Rand Corporation
2002-Timothy M. Raupp, Oshkosh Truck Corporation
2001-Carl M. Albero, American Systems Engineering Corporation, LLC
2000-James C. Restelli, The Boeing Company
1999-Jack D. Garrison, Lockheed Martin Corporation
1996-Curtis B. Barton, Raytheon Company
1995-W. B. "Zim" Zimmerman, Lockheed Martin
1994-John B. Tiller, Raytheon Company
1993-R. Noel Longuermare, Westinghouse Electronics Systems Group
1992-William E. Rogers, Martin Marietta (Posthumously)
1991-Donald B. Hall, Logistics Management Engineering, Inc.
1990-Russell A. Van de Steeg, Hughes Aircraft
1989-Thomas H. Roberts, Lockheed Electronics Company
1988-Harold B. Stromfeltz, Northrup Grumman Company
1987-Edwin L. Curll, Westinghouse Electronics Corporation
1986-Siegfried Goldstein, Siegfried Enterprises, Inc.
1985-Ralph H. Shapiro, Hughes Aircraft Company
1984-Richard L. Hale, Westinghouse Electric Corporation
1983-Ernest H. Manuel, ITT Corporation
1982-Vernon E. Teig, McDonnell Aircraft Corporation
1981-Richard D. Webster, Westinghouse Electric Corporation
1980-Joseop R. Garafolo, Hughes Aircraft Company
1979-George Beck, Jr., Westinghouse Electric Corporation
1978-Barry J. Shillito, Teledyne, Inc.
1977-Walter C. Klass, McDonnell Douglas Astronautics
1976-Paul M. Boyer, Westinghouse Electric Corporation
1975-Donald R. Earles, Raytheon Company
1974-Edwin R. Fallon, Jr., Logistics Management Engineering
1973-Reynold R. Gardner, Hughes Aircraft Company
1972-John W. Breehl, Grumman Aerospace Corporation
1971-John E. Losee, McDonnell Douglas Corporation
1970-James L. Carpenter, Jr., Martin Marietta Corporation
1969-Fred T. Carlson, The Boeing Company
1968-Jay E. Reddicks, Hughes Aircraft Company
1967-Richard R. Hagland, Collins Radio Company
1966-Robert N. Johns, Douglas Aircraft Company
1965-Douglas Aircraft Company, Inc.
1964-A. C. Martin, Westinghouse Electric Corporation
1963-North American Aviation, Inc.
1962-Dr. E. T. Ferraro, General Precision, Inc.
1961-P. N. Jansen, Sr., The Boeing Company
1960-Hughes Aircraft Company
1959-B. Edelman, Western Electric Company

Mr. Joseph Grosson
Recipient of the 2005
National Defense Industrial Association
Greer Award Winner

Mr. Joesph F. Grosson's tireless professionalism has improved the nation's warfighting capabilities through sustained outstanding performance in government, industry, professional associations and DoD/Industry partnerships. In a rapidly changing and militarily challenging world, Mr. Grosson has not just conceptualized change; he has led the charge to implement, follow up and continue to ensure our warfighters receive the best technology and logistics support our national power base can provide. Mr. Grosson has been a defense engineer and logistics practitioner for over 45 years. For 24 years he was a civilian employee of the Navy Department advancing from GS-5 to SES, holding a number of major positions such as Executive Director for Acquisition, Chief of Naval Materiel; Director, Surface Combatant Logistics Division, NAVSEA; and Assistant Deputy Commander for Acquisition, NAVSEA; amongst others. In addition to his superb professional support of numerous weapons systems and acquisition logistics policy management, he also authored a number of technical publications in the areas of both naval engineering and logistics, and earned the Navy Superior Civilian Service Award. Concurrently he served as a Naval Reserve Officer for thirteen years.

In industry, Mr. Grosson has been an ardent evangelist for the application of new business models and technology that increase system availability and decrease total life cycle cost. He has served in a number of executive capacities including VP positions at VSE Corporation, DynCorp, and Lockheed Marine Systems Group as well as his current position as Managing Director of the Enterprise Logistics Technology Office at Lockheed Martin. He has "deckplate" engineering experience as VP at Lockport Marine Shipyard working major overhauls and modernizations. Mr. Grosson's current responsibility is to champion technology advancements in areas such as autonomic logistics, logistics command and control, supply chain management and automatic identification. His technology team is also creating a logistics knowledge management system, community-of-practice, and a logistics education institute. Further, Mr. Grosson was a founder of Lockheed Martin's Focused Logistics Enterprise initiative. He was the focal point and driver for the Navy's Full Service Contracting Wargame, and personally authored a report for the Chief of Naval Personnel entitled: Observations & Recommendations Regarding the Navy Human Resource Office Community which was very well received.

Over the years, Mr. Grosson has been a stalwart pillar of NDIA's Logistics Management Division, proactively participating in division programs, policy recommendation development to government, senior division leadership positions and over 22 years of exceptionally successful National Logistics Conferences and Exhibitions. Throughout the years, he has been a consistent contributor to the NDIA National Logistics Conference as an organizer, presenter and tireless floor worker.

Mr. Grosson has also worked closely with the Aerospace Industries Association (AIA) Product Support Committee to coordinate issues of mutual interest, including groundbreaking development of Performance Based Logistics (PBL) policy, directives and acquisition guidelines. He has earned a national reputation as the leading PBL expert, not only in the realm of government policy and program management, but more importantly as an industry professional who has helped develop, field and execute successful operational PBL contracts. When it comes to PBL, he has proven he can not only "talk the talk" but also "walk the walk." When asked for help by professionals in government or industry, Mr. Grosson can be relied upon to take extra effort to ensure selfless assistance.

Mr. Grosson has earned an impressive list of educational and professional credentials to include:

- Master of Mechanical Engineering with Post Masters studies in Ocean Acoustics, Catholic University of America
- Bachelor of Marine Engineering, State University of New York
- Executive Controls Program, School of Business Administration, Syracuse University
- Graduate, Federal Executive Institute
- Graduate, Defense Systems Management College
- Registered Professional Engineer in three states
- USCG Licensed Engineering Officer
- Patent Holder

The Logistician Emeritus Award

The Logistician Emeritus Award is presented to an individual who has demonstrated outstanding competence and has made a substantial contribution in the field of national security logistics while serving in a governmental position. The award was established by the Logistics Management Division in 1980 as a means of recognizing deserving individuals.

Past Logistician Emeritus Award Winners

2005 VADM Gordon S. Holder, USN (Ret)
2004 LTG Charles S. Mahan, Jr., USA (Ret)
2003 LTG Roy E. Beauchamp, USA (Ret)
2002 LTG Mike McDuffie, USA (Ret)
2001 Mr. James B. Emahiser, DoD (Retired)
2000 Maj Gen John F. Phillips, USAF (Ret)
1999 Mr. Eric A. Orsini, DASA (Logistics)
1998 GEN William G. T. Tuttle, Jr., USA (Ret)
1988 Mr. Richard G. Bruner, Former Executive Director, DLA
1987 Maj Gen Monroe T. Smith, USAF (Ret)
1986 Mr. Edwin Greiner, US Army Materiel Command
1985 ADM Isaac C. Kidd, Jr., USN (Ret)
1984 RADM Duncan P. McGillivary, USN (Ret)
1983 Maj Gen Graham W. Rider, USAF (Ret)
1982 Maj Gen Martin C. Fulcher, USAF (Ret)
1981 Lt Gen George Rhodes, USAF (Ret)
1980 LTG Joseph M. Heiser, USA (Ret)

General John W. Handy, USAF (Ret)
Recipient of the 2006
National Defense Industrial Association
Logistician Emeritus Award

General John W. Handy retired from the United States Air Force in 2005 after providing over 39 years of outstanding active service and logistics leadership to the nation, coalition partners, joint commands and the Air Force team. General Handy concluded his singularly distinctive career as Commander, United States Transportation Command; and Commander, Air Mobility Command from November 2001 – September 2005, retiring from active duty on October 1, 2005.

General Handy was in the Air Force Operations Center 11 September 2001, leading immediate strategic logistics efforts toward scrambling all available fighter aircraft to protect the skies over our Nation. During his subsequent command, he ensured vital support to worldwide military, peacekeeping, humanitarian, and aeromedical operations during Operations NOBLE EAGLE, ENDURING FREEDOM, and IRAQI FREEDOM. His leadership enabled the movement of more people, equipment, and supplies to more locations around the world than in any other period since World War II. With operations in Afghanistan, Iraq, the Philippines and the Horn of Africa, the global war on terrorism is truly global. Against hard operational timelines, the demands on mobilization were great, and America's tanker, airlift and sealift forces rose to the occasion, achieving what no other force in the world is capable of doing—projecting and sustaining major military forces into remote and austere regions under the most challenging conditions. To assist in these never before seen operations, General Handy spearheaded a close partnership with our commercial carriers. Without the dedication and determination of the Civil Reserve Air Fleet (CRAF), the massive and fast-paced demands of the troop deployment could not have been met. From a purely logistical standpoint, General Handy provided as many aircraft as possible to meet the warfighter's requirement. In addition, he took the proactive approach, "operational supply," to further enhance aircraft supportability of aircraft operations worldwide. He beefed up the supply stocks at locations with increased traffic, added mobility readiness spares kits (MRSPs) to selected locations, and deployed MRSPs to other surge locations around the globe. This process allows increased flexibility, a smaller footprint, and provides global visibility of aircraft parts. His accomplishments during this important period in our nation's history can best be summed up by the Honorable Jim Saxton of New Jersey in his speech, "Tribute to a Leader" which was delivered in the US House of Representatives on 6 Sep 2005…"General Handy will be remembered as the man who brilliantly led our Nation's mobility forces during the Global War on Terrorism. It is clear and widely accepted that General Handy is the preeminent mobility and logistics expert in the Department of Defense."

Despite the pressures of current Joint and Strategic logistics operations, General Handy was also committed to laying the framework for more long-term strategic logistics benefits. The Quadrennial Defense Review, Base Realignment and Closure, Strategic Planning Guidance, Joint Operational Concepts and Focused Logistics Campaign Plan (just to name a few) reflect his commitment to ensure logistics is documented as a primary operational warfighting capability required to project and sustain national power.

In addition to his heavy operational workload, General Handy was designated in 2003 as the Department of Defense Distribution Process Owner – one of the most significant transformational efforts of this decade. In that capacity, General Handy's personal vision and direct leadership resulted in immediate improvements to the efficiency and interoperability of distribution-related activities—deployment, sustainment, and redeployment support during peace and war. Most importantly, he and his command crafted a process that is being replicated across the combatant commands. The DPO construct has been successfully used over the recent past in support of OIF and OEF in USCENTCOM, Tsunami support in USPACOM, and hurricane relief efforts in USNORTHCOM. Moreover, he was instrumental in defining and obtaining the requisite authorities and designations to further improve the Defense Transportation and Distribution Systems.

As Vice Chief of Staff and Deputy Chief of Staff for Installations and Logistics, Headquarters US Air Force, General Handy directed global logistics capabilities for the Air Force providing strategic airlift to all military forces. While meeting high operational tempo commitments, he drove the implementation of the Aging Aircraft & Depot Caucus Teams, the AF's first looks at how to increase logistical support to the aging fleet and the warfighter through our depot operations while sustaining agile combat support.

In other assignments, General Handy commanded 21st Air Force, the Air Mobility Command's Tanker Airlift Control Center, two airlift wings and a maintenance squadron. Each command served with distinction in support of expeditionary warfare missions. His other key staff tours were with US Transportation Command as the Director of Operations and Logistics and with Headquarters US Air Force as the Director of Programs and Evaluations. In these important assignments he planned and executed a wide range of power projection and sustainment operations for Air and Joint missions. Always willing to share his time, General Handy has supported numerous educational and professional institutions, to include his participation in numerous NDIA Logistics Division events.

In war and peace, General Handy's contribution to national security logistics has been uniquely outstanding. He persevered to achieve logistics readiness initiatives through his professional reputation and relationships with leaders in the Department of Defense, the federal government, commercial industry, labor, and congress. He was able to clearly define vital transportation security requirements resulting in critical legislation to expand the Maritime Security Program thus increasing the number of vessels in America's commercial sealift program from forty-seven to sixty…a vital improvement to the nation's capability to respond militarily during national emergencies. He demonstrated superlative leadership and provided wise counsel to the Secretary of Defense; Chairman, Joint Chiefs of Staff; fellow combatant commanders; Service Chiefs; and members of Congress on all matters relating to defense transportation and distribution. His vision was critical to our national success in the Global War on Terrorism and has defined what future logistics capabilities must achieve. General Handy's myriad logistics contributions and sustained accomplishments set him apart as the National Defense Industrial Association's Logistician Emeritus for 2006.

Promotional Partners

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High performance. Delivered.

Accenture is a global management consulting, technology services and outsourcing company. Committed to delivering innovation, Accenture collaborates with its clients to help them become high-performance businesses and governments.

A trusted strategic advisor, Accenture is positioned to help our Department of Defense clients meet rising performance demands. Our approach blends commercial leading practices with emerging capabilities from both the public and private sectors. And, by offering a combination of custom development and commercial off-the-shelf (COTS) software, we can help you find cost-effective solutions that produce immediate, measured results.

We'll help you customize private sector capabilities to your specific requirements by committing a team of experienced professionals who have deep knowledge of relevant defense practices. We understand that, in many cases, the US military has requirements with no commercial parallel. This is why we have a core team of experienced personnel who are exclusively focused on DoD customer needs.

Our approach is based on our ability to mobilize a broad and deep network of global resources and alliance partners. While we have alliances with most major technology providers, we are careful to remain product independent – creating the best solutions based on our clients' specific needs. And, because our expertise spans all stages of a program life cycle, we can come in at any phase of your project, stay for its entire life cycle or assist in limited stages.

Our goal is to help our defense clients reach new heights of performance through better decision making and improved information sharing in today's dynamic environment. From the warfighting "tooth" to the support function "tail," Accenture powers your mission.

With more than 126,000 people in 48 countries, the company generated net revenues of US$15.55 billion for the fiscal year ended Aug. 31, 2005.

Anteon™

Anteon is a leading systems integration company that provides mission, operational and information technology enterprise support to the US government. We design, integrate, maintain, and upgrade systems for national defense, intelligence, emergency response, infrastructure and other high-priority government missions. We also provide many of our customers with the systems engineering and program management skills necessary to manage the development and operations of their mission-critical systems.

We support all aspects of military operations from the Warfighter in Iraq and Afghanistan, to staff augmentation and training support at the strategic level within the Joint Staff and Office of the Secretary of Defense. Our customer base includes Office Secretary of Defense (OSD), the Joint Staff, Combatant Commands, Military Services, the Department of Homeland Security, and nearly all cabinet-level agencies, as well as numerous other Civilian and National Intelligence agencies. Our business is built on the depth of our customer knowledge, and the strength of our core technological and mission centric competencies. We deliver best value, trusted information technology, Engineering Solutions, services, training, logistics management and transformation in support of our customer's missions.

For 2005, Anteon reported revenues in excess of $1.4 billion. The company was founded in 1976 and has grown to currently employ more than 9,800 employees in more than 100 offices worldwide. Anteon consistently ranks among the top information technology integrators based on independent surveys, and has been named to the Forbes' List of the 400 Best Big Companies in 2005, earning distinction on the Forbes' Platinum List. Anteon is listed on the Standards & Poor's MidCap 400 Index. For more information, visit www.anteon.com or contact Mike Brown or Christian Hoff at 703-246-0286/0331.

Promotional Partners

BearingPoint, Inc. (NYSE:BE) is one of the world's largest business consulting, systems integration and managed services firms. BearingPoint has a solid record of helping public sector organizations worldwide drive real results. In the US BearingPoint's Public Services group:

- Ranks #14 among System Integrators in Washington Technology's 2004 Top 100 Federal Prime Contractors in Information Technology list, and
- Ranked amongst the 2005 Top 100 Defense Contractors in Defense News
- Serves all 15 Cabinet-level departments of the Federal Government.

With teams supporting all service branches of the Department of Defense (DoD) as well as DoD Agencies, BearingPoint understands the current challenges in providing logistics support to evolving joint and coalition missions around the world and the resulting impact on warfighter readiness in the 21st century. We provide a range of solutions to meet these challenges from supply chain strategy to advance planning systems and product lifecycle management as well as RFID solutions-all of which will enable DoD to address these challenges.

BearingPoint's solutions are based on years of experience helping the warfighter with critical initiatives to improve logistics support and responsiveness from factory to foxhole. Current areas supported include Performance-based Logistics (PBLs), RFID demonstrations, Strategic Sourcing and Supplier Alliances, and various Industrial Base Assessments. These solutions leverage our years of industry-specific experience and are designed to help clients reduce logistics response time, improve visibility of assets in the supply chain, and generate savings for the warfighter.

To learn more about how we can your organization, contact us at:
1-866-BRNGPNT
www.bearingpoint.com/defense
publicservices@bearingpoint.com

SAP for Defense & Security: Designed for your Industry, Ready for your Mission

Whether in fighting the global war on terror or safeguarding our homeland from natural disasters, SAP for Defense & Security delivers real-time, actionable intelligence on the status of your assets and resources.

Defense Organizations
SAP is committed to the mission of modernizing and transforming information systems in support of the "Warfighter." SAP for Defense & Security provides your organization with business processes on top of a world-class platform that incorporates our in-depth understanding and expertise in military operations and support. SAP is proud to list successful Department of Defense (DoD) programs currently deployed on SAP defense and security solutions.

Security Organizations
With SAP for Defense & Security, you can adapt your organization to unanticipated events and an ever-changing geopolitical environment. Optimize your IT investments to support customs, border patrol, first responder, and other critical functions. And enhance your operations with horizontal integration that promotes collaboration and makes key information available for fast and accurate decision-making.

SAP for Defense & Security gives you the functionality you need to integrate information, systems, and processes -- quickly, accurately, and securely. You can share data among a wide range of organizations, from police force to central government, despite differing systems, budgets, and priorities. All while gaining visibility into your global supply chain.

Promotional Partners

Boeing Support Systems
Boeing Support Systems is focused on maximizing the readiness and effectiveness of fielded systems by offering a complete spectrum of support products and services. Support Systems integrates the best of Boeing's support capabilities to provide focused logistics and services to meet the needs of its customers.

With management offices and operations in St. Louis, Mo., Logistics Support Systems has major operations in Wichita, Kan.; San Antonio, Texas; Long Beach, Calif.; Jacksonville, Fla.; Philadelphia; Mesa, Ariz.; Fort Walton Beach, Fla.; and Oklahoma City, Okla.; as well as operations in Australia and the United Kingdom. More than 16,000 people at more than 170 global locations make up the Support Systems team.

Support Systems offers a unique capability in the market, being able to integrate all elements of weapon-system sustainment within a single organization. These capabilities include maintenance, modifications and upgrades; integrated logistics services; and training systems and services.

Maintenance, Modifications and Upgrades: Services range from regular, scheduled maintenance of military aircraft, such as the KC-135 Programmed Depot Maintenance program, to sophisticated structural and avionics modifications like the C-130 Avionics Modernization Program and support for the Presidential aircraft fleet.

Integrated Logistics Services: The application of on-line, real-time, integrated information systems to provide reliability and demand forecasting, total asset visibility, maintenance information and field data to improve aircraft availability and reduce costs. Complete engineering support of large systems such as the B-52 and on-site personnel support at customer locations, including the Naval Strike and Air Warfare Center, which includes the Navy's Top Gun school.

Training Systems and Services: Aircrew and maintenance training devices and instructional systems, including innovative networked devices for the F-15 Distributed Mission Operations program, as well as classroom and cockpit instruction, courseware development and logistics support of training devices.

Advanced Logistics Services: Developing new capabilities and business models to expand into new logistics and sustainment markets, including network-centric sustainment and broad, integrated life-cycle customer support solutions.

Additionally, Support Service's Boeing Australia Limited provides total life cycle support of military aerospace systems for its primary customer, the Australian Defense Force, including program management; aircraft production; modification and upgrades; aircraft maintenance; integrated logistics and through-life support; and systems engineering. Boeing Service Company provides satellite and ground-systems operations services, space mission planning and other mission support services.

Computer Sciences Corporation is a leading global information technology (IT) services company. CSC's mission is to provide customers in industry and government with solutions crafted to meet their specific challenges and enable them to profit from the advanced use of technology. The company's success is based on its culture of working collaboratively with clients to develop innovative technology strategies and solutions that address specific business challenges or operational mission imperatives.

Since 1959, CSC has consistently delivered successful results on some of the Government's largest and most complex challenges. With CSC's proven business transformation experience, our customers can be confident that they have a partner who has the experience, capabilities, and commitment to help them succeed.

With approximately 80,000 employees, CSC provides innovative solutions for customers around the world by applying leading technologies and CSC's own advanced capabilities. These include systems design and integration; IT and business process outsourcing; applications software development; Web and application hosting; and management consulting. Headquartered in El Segundo, CA, CSC reported revenue of $14.6 billion for the 12 months ended Dec. 30, 2005. For more information, visit the company's Web site at www.csc.com.

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Booz | Allen | Hamilton

Booz Allen Hamilton has been at the forefront of consulting for businesses and governments for 90 years. Today, Booz Allen is one of the world's largest consulting firms, with more than 16,000 staff worldwide, serving clients on six continents. Our growth is based on a simple promise: Help clients succeed. Never has that goal been more urgent than today. In a world that changes ever faster, where our clients are expected to continually innovate and raise their game, Booz Allen is dedicated to creating tangible, lasting value with every engagement. That focus is at the core of our mission:

Booz Allen Hamilton works with clients to deliver results that endure.

With deep expertise in both strategy and technology, Booz Allen Hamilton transcends the conventional categories of consulting. Our global breadth of proficiencies—spanning functional capabilities, experience in more than 20 industries, and government work with diverse public sector markets—is grounded in our firsthand knowledge gained from serving clients.

Booz Allen provides full-spectrum logistics services to military logisticians, who face new challenges in providing critical warfighter support. Readiness and sustainment of our Armed Forces requires creative, cost-effective strategies that go beyond traditional methods of acquisition, distribution, maintenance, and repair. New partnerships and processes are needed to give our forces the flexible capabilities to meet their mission.

Booz Allen Hamilton works with strategic and operational military logistics professionals to give the warfighter the best equipment and support with the least resource impact. We offer decades of commercial, government, and DoD experience; core competencies in strategy and technology; logistics professionals at the forefront of evolving best practices; and deep expertise in every logistics function in each military service.

Booz Allen provides expertise and value-added support for Department of Defense Logistics needs including Logistics Engineering, Product Support, Modeling & Simulation, Lean/Six Sigma/Theory of Constraints, Performance-Based Logistics, Economic Business Analysis, Supply Chain Management, Decision Support tools, Strategic Sourcing, Parts Marking and Unique Identification, Vendor and Supplier Relationship Management, JCIDS Analysis, Logistics Transformation Roadmap, and Distribution Operations.

For more information, visit www.boozallen.com

LOCKHEED MARTIN

Headquartered in Bethesda, Maryland, Lockheed Martin, an advanced technologies company, employs about 135,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. As a lead systems integrator and information technology company, nearly 80% of Lockheed Martin's business is with the US Department of Defense and the US federal government agencies. The remaining portion of Lockheed Martin's business is comprised of international government and some commercial sales of our products, services and platforms.

We provide surface, air, and undersea applications on more than 460 programs for US military and international customers in nearly 50 nations. The same expertise we provide to military customers is being applied to increase the capabilities of US and international civilian agencies. Our portfolio of capabilities includes advanced platforms; homeland security; integrated warfare systems; lifetime support, logistics and training; missile defense; network centric systems; sensors and surveillance; and systems integration.

Lifetime Support, Logistics and Training
Lockheed Martin delivers total lifetime support services designed to enhance customer performance, increase system life span and reduce risks, operational costs and logistics response times in military, civil government and commercial programs. Our innovative training and logistics solutions are tailored to each organization, ranging from end-to-end logistics, to interactive courseware and simulations to global supply chain management.

Promotional Partners

EDS (NYSE:EDS) is a leading global technology services company delivering business solutions to its clients. EDS founded the information technology outsourcing industry more than 40 years ago. Today, EDS delivers a broad portfolio of information technology and business process outsourcing services to clients in the manufacturing, financial services, healthcare, communications, energy, transportation, and consumer and retail industries and to governments around the world.

For more than 35 years, our defense and civilian government clients around the world have trusted EDS to support their mission-critical programs. We are continuing that legacy today, helping governments to improve productivity, reduce costs, transform service and support models, become more agile and focus on their core mission.

In the defense marketplace, EDS helps improve military effectiveness by enhancing and transforming operational systems and support functions. We work with defense departments worldwide to manage and exploit information to meet their military objectives with reduced costs. EDS' services in the defense industry include:

- Military lifecycle logistics and supply chain management
- Command and Control – systems and support
- Personnel, training, and administration
- Military medical health services
- Information security
- Defense secure infrastructure
- Specialized applications
- Knowledge management
- Program management

EDS combines extensive experience in the defense arena with innovation in these domains to provide bold, proven, and scalable solutions that support defense department transformation.

From homeland security and public safety services to enterprise-wide solutions, government health and family services and e-government services, we have expertise in areas critical to government projects of all kinds. By eliminating boundaries,

---

Telos Corporation is a systems integration and services company that has been providing innovative IT solutions to government agencies and commercial organizations for more than 30 years. Specific offerings consist of Xacta's Secure Solutions which include enterprise IT security management solutions, enterprise security consulting services, enterprise messaging, secure wireless networking, and high assurance credentialing solutions. Its customers are primarily agencies of the federal government, such as DOD, intelligence agencies, Department of Homeland Security, Treasury Department, US Courts and many other civilian agencies.

Promotional Partners

MAERSK LINE, LIMITED

Maersk Line, Limited is a global, comprehensive provider of logistics, maritime and transportation services to US Government agencies and prime contractors. The company combines industry-leading technology in ship development and operations, including the intermodal network of the A.P. Moller-Maersk with expertise in Integrated Defense Logistics, Contract and Specialized Vessel Management, and Vessel Life Cycle Management.

Raytheon

Raytheon Company Today

Raytheon is a global leader in technology-driven solutions that provide integrated mission systems for the critical defense and non-defense needs of its customers. Raytheon's integrated businesses assure mission success with a broad range of products and services in government electronics, space, information technology, technical services, business, aviation and special mission aircraft.

The people of Raytheon provide the most advanced technology in the world in a number of key strategic business areas:

- Covering the entire spectrum of Precision Engagement, Raytheon systems provide warfighters highly accurate, adverse weather, sensor-to-shooter capabilities required on today's battlefields.
- Raytheon is one of the world's leading organizations involved in Missile Defense.
- Raytheon provides state-of-the-art technology to detect, protect and respond to terrorism in support of Homeland Security.
- Raytheon technology forms the eyes, ears and brains of Intelligence, Surveillance and Reconnaissance systems, from the Predator to the Global Hawk.

Raytheon Company's government and defense organization is composed of six businesses:

- Integrated Defense Systems (IDS) – IDS is Raytheon's leader in Joint Battlespace Integration providing affordable, integrated solutions to a strong international and domestic customer base, including the US Missile Defense Agency and the US Armed Forces.
- Intelligence & Information Systems (IIS) – IIS is a leading-edge provider of information and intelligence solutions to the government, providing the right knowledge at the right time. IIS is also home to Raytheon's Homeland Security (HS) strategic business area.
- Missile Systems (MS) – MS designs, develops, and produces missile systems for critical requirements.
- Network Centric Systems (NCS) – NCS develops and produces network centric solutions that integrate sensors, systems and secure communications to manage the battlespace and airspace.
- Space and Airborne Systems (SAS) – SAS is the leading provider of sensor systems giving military forces the most accurate and timely information available for the network-centric battlefield.
- Raytheon Technical Services Company (RTSC) – RTSC provides technology solutions for defense, federal and commercial customers worldwide. It specializes in Mission Support, counter-proliferation and counter-terrorism, base and range operations and customized engineering services.

Promotional Partners

NORTHROP GRUMMAN

Northrop Grumman Corporation is a global defense company headquartered in Los Angeles, CA. Northrop Grumman provides a broad array of technologically advanced, innovative products, services and solutions in systems integration, defense electronics, information technology, advanced aircraft, shipbuilding, and space technology. The company has more than 125,000 employees and operates in all 50 states and 25 countries and serves U.S. and international military, government and commercial customers.

Our Products, Programs and Services

Northrop Grumman Corporation's eight operating sectors deliver an extraordinary breadth and depth of capabilities to the company's military, government and commercial customers. Together and individually, our sectors meet defense needs across the battlespace spectrum, from undersea to sea, land, air, space and cyberspace. Our key capabilities include:

- Battle Management
- Chemical and Bio-Detection Systems
- Electronic Warfare Systems
- Intelligence, Surveillance, and Reconnaissance
- IT Infrastructure
- Manned and Unmanned Airborne Systems
- Missile Defense
- Navigation Systems
- Non-Nuclear/Nuclear Shipbuilding
- Radar and Air Defense Systems
- Satellite and Space Systems
- Systems Integration

Electronic Systems

Our Electronic Systems sector is a world leading provider of airborne radar, navigation systems, electronic countermeasures, precision weapons, airspace management systems, space systems, marine and naval systems, communications systems, government systems and logistics services.

Information Technology

Our Information Technology sector delivers full life-cycle solutions that meet mission, enterprise and infrastructure needs in information systems and services; C4ISR; strategic security; engineering and science; training and simulation; base and range operations; and enterprise IT solutions and products.

Integrated Systems

Our Integrated Systems sector designs, develops, produces and supports network-enabled integrated systems and sub-systems for US government, civil and international customers. It also supports the military with intelligence, surveillance and reconnaissance; battle management command and control; and integrated strike warfare.

Mission Systems

Our Mission Systems sector is a leading global integrator of complex, mission-enabling systems and services. The sector's technology leadership spans command, control and intelligence systems; missile systems and technical and management services.

Newport News

Our Newport News sector is the nation's sole designer, builder and refueler of nuclear-powered aircraft carriers and one of only two companies capable of designing and building nuclear-powered submarines. The sector also provides services for a wide array of naval and commercial vessels.

Ship Systems

Our Ship Systems sector is one of the nation's leading full service systems companies for the design, engineering, construction, and life cycle support of major surface ships for the US Navy, US Coast Guard and international navies, and for commercial vessels of all types.

Space Technology

Our Space Technology sector develops a broad range of systems at the leading edge of space, defense and electronics technology. The sector is a leading developer of military and civil space systems, satellite payloads and advanced technologies from high-power lasers to high-performance microelectronics.

Technical Services

Our Technical Services sector provides life-cycle solutions and a foundation for long-term technical services. Technical Services is poised for growth in the logistics support, sustainment, and technical services marketplace. Key areas of focus include support services for Northrop Grumman OEM (Original Equipment Manufacturer) products, non-platform service opportunities, and third-party product support opportunities.

Thank you to our Promotional Partners

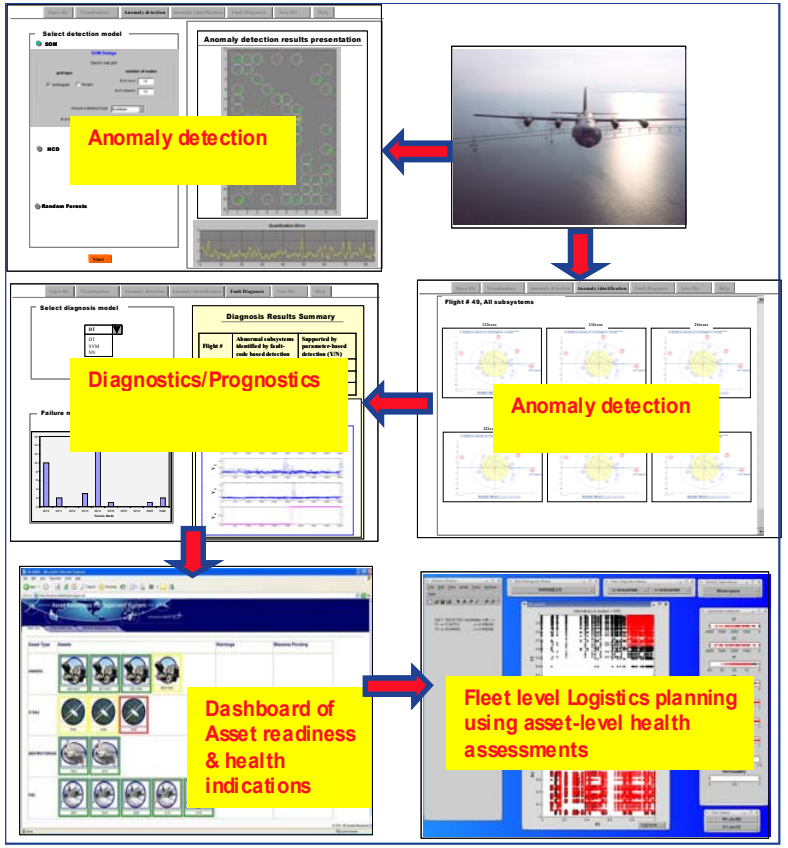
Booz | Allen | Hamilton

Prognostics & Health Management at GE

Dr. Piero P.Bonissone

Industrial AI Lab

GE Global Research

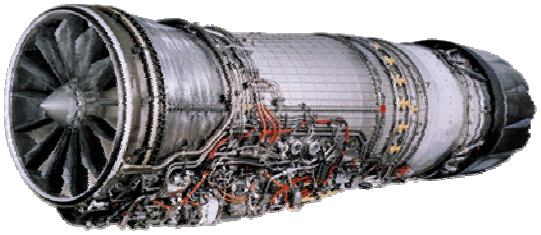


imagination at work

Prognostics & Health Management (PHM)

- **Expert-on-Alert (EOA™):** A Commercial Success Story

- **PHM Technology Development and Applications**



imagination at work

Expert-on-Alert (EOA™): A Commercial Success Story for GE Rail

Complex, Mobile, Repairable System…

- ***24 Microprocessor Controllers***
- ***<u>No new sensors</u> (used existing controllers' sensors)***
- ***200,000 parts***
- ***100,000+ miles/year***
- ***Extreme operating environment***
- ***20 years of life***
- ***Continuous Field Modifications (multi/year)***
- ***3-4 Scheduled Shop-visits/year***
- ***4-5 Un-Scheduled Shop-visits /year***
- ***2-3 Overhauls over life***
- ***Distributed Maintenance Environment***

History of Expert-On-Alert™ (EOA™)

• Launched 1998 : **200** locomotives	– CBR + BBN
• 1999 : **600** locomotives	– CBR
• 2000 : **1000 – 1500** locomotives	– CBR + JDPAD(Rule Based):
• 2001 :	– CBR + JDPAD + Data Mining
• 2002 :	- Process Automation : Tools + 30% Auto RX
• 2003 : **4000** locomotives :	- Improved Rx Precision,
	- Vastly increased parameter availability
• 2004-05: **5000+** locomotives	- Improved Rx Precision and larger fleet coverage

Expert-on-Alert (EOA™): Proactive Maintenance Recommendations

EOA™ Overview

Expert on Alert™ RM&D Service

- Failure reduction… "Fix right the first time"
- Fewer shoppings… "Fix out of the shop"
- Shop efficiency… "Expert Diagnostics"
- Lower parts cost… "Correct part removal"

Enabled By…

- Wireless, real time data management
- Expert diagnostic tools & rules
- Closed loop diagnostic system & process
- Seamless B2B integration with maintenance systems

Benefits Proven On Over 4,000 Locomotives

MCES 2004 October 26 – 28, 2004 Page 3

Sensor Data
Maintenance Logs
Repair Data

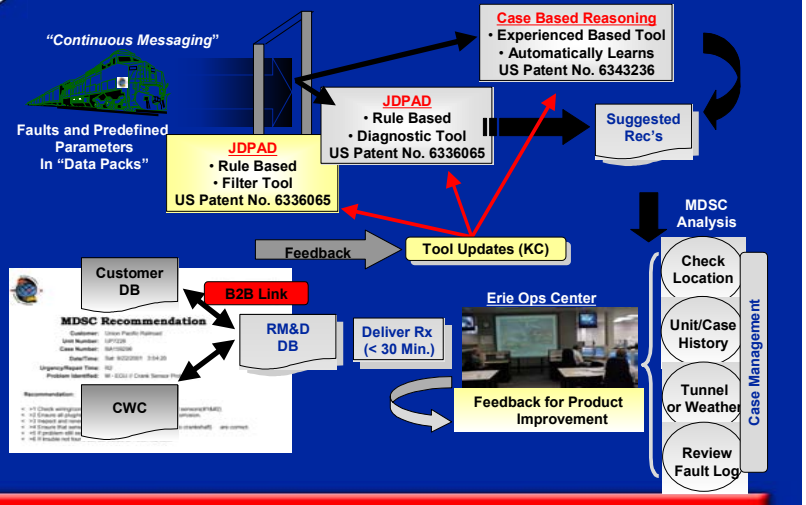
Fuzzy + CBR + RBR

- ***Key Goal:*** *Using existing locomotive sensors and wireless communication system, provide railroads with condition-based maintenance and repair service (advanced failure notifications to schedule corrective repair)*

- ***Solution:*** ***Hybrid rule-based & case based reasoners*** *predicting incipient locomotive failures. The reasoner uses a workflow system to specify best suggested repair procedure and notify the RR*
- ***Benefits:*** *Decrease number of road failures and increase % utilization. Change unscheduled maintenance events into scheduled ones.*
  24/7 Fleet Mgmt

Personnel reduced from 150 to 2 !!

EOA™ Continuous Learning



Technology … Fix it Right the 1st Time … Everywhere

MCES 2004 October 26 – 28, 2004 Page 4

Sample Case

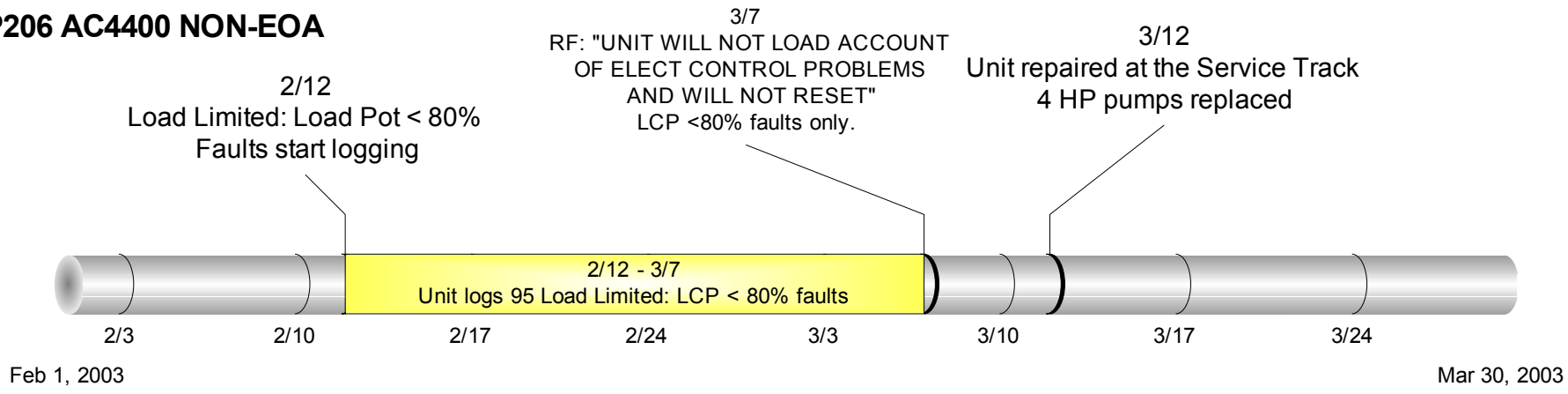
Cust ID	Unit Numb.	Occur Date	Fault Code	Occur Hours	Reset Hours	Loco Sped	DIR ET	CT H	Eng Sped	Volt	Main Amps	Alt Fld	Wat Tmp	Oil Tmp	BRSLACTAA L	TOWE T	DAFE E	RNFR R	BF O	I N O	Misc. Status	SE	Fault Description
AB	8894	03-mar-1996	453D	80377.61	80377.61	30.7	R	8	995	8	0	0	176	200	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	03-mar-1996	453D	80390.61	80390.61	6.2	F	2	580	5	16	0	169	177	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	03-mar-1996	49CC	80392.48	80392.50	0.0	C	S	0	3	0	0	176	178	R	E	O	O	F		_____V_		Intake Manifold Air Too
AB	8894	04-mar-1996	453D	80408.23	80408.23	13.7	F	8	1047	7	14	0	175	204	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	05-mar-1996	453D	80424.98	80424.98	14.9	F	7	992	7	14	0	176	194	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	05-mar-1996	450F	80428.70	80428.71	22.4	F	8	983	399	182	112	172	194	M	E	F	F	6		AB_M_S__		Load Limited: L
AB	8894	05-mar-1996	422E	80428.71	80476.26	22.0	F	8	962	548	105	242	174	194	M	E	F	4	6		AB_M_S__		Fault Reset While In Le
AB	8894	05-mar-1996	453D	80430.56	80430.56	35.1	F	8	992	9	4	0	187	197	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	05-mar-1996	428E	80442.03	80476.55	4.3	F	1	482	7	0	0	176	180	R	E	2	O	D		AB_____		TM Plug Attempted At To
AB	8894	06-mar-1996	452C	80451.88	80452.35	0.0	F	4	885	30	476	273	167	172	M	E	F	O	6		AB_M_S__		TM #3 Stalled (High Cur
AB	8894	06-mar-1996	452B	80451.88	80452.35	0.0	F	4	885	32	480	316	167	172	M	E	F	O	6		AB_M_S__		TM #2 Stalled (High Cur
AB	8894	06-mar-1996	452E	80451.88	80452.33	0.0	F	4	885	30	17	293	167	172	M	E	F	O	6		AB_M_S__		TM #5 Stalled (High Cur
AB	8894	06-mar-1996	454C	80451.90	80452.33	0.0	F	5	992	35	171	344	169	174	M	E	F	O	6		AB_M_S__		TM #5 Exceeded 240 C at
AB	8894	06-mar-1996	4548	80451.90	80452.33	0.0	F	5	992	35	161	343	168	173	M	E	F	O	6		AB_M_S__		TM #1 Exceeded 240 C at
AB	8894	06-mar-1996	454B	80451.90	80452.33	0.0	F	5	992	35	184	345	169	174	M	E	F	O	6		AB_M_S__		TM #4 Exceeded 240 C at
AB	8894	06-mar-1996	422E	80452.33	80486.86	0.0	C	1	323	6	0	0	176	180	R	E	F	O	F		AB_____		Fault Reset While In Le
AB	8894	06-mar-1996	453D	80454.98	80454.98	22.7	F	8	995	8	5	0	177	200	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	06-mar-1996	4016	80462.38	80462.38	0.0	F	2	0	3	1	0	170	174	M	E	O	O	D		_B_____		Unable To Load: Check S
AB	8894	07-mar-1996	453D	80476.21	80476.21	29.1	F	8	992	8	4	0	187	197	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	07-mar-1996	4006	80476.43	80476.43	0.0	F	1	436	10	955	78	170	172	M	E	F	O	5		AB_M_S__		T/L 8 And 9 Changed Whi
AB	8894	07-mar-1996	422E	80476.56	80539.41	0.0	C	1	332	5	3	0	177	181	R	E	F	O	F		AB_____		Fault Reset While In Le
AB	8894	07-mar-1996	453D	80480.83	80480.83	18.6	F	8	992	8	9	0	178	200	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	07-mar-1996	49CC	80493.33	80496.43	0.0	C	S	0	3	1	0	176	178	R	E	O	O			_____		Intake Manifold Air Too
AB	8894	08-mar-1996	49CC	80496.45	80496.45	0.0	C	S	0	2	0	0	138	129	R	E	O	O	F		_____		Intake Manifold Air Too
AB	8894	08-mar-1996	49CC	80496.46	80496.70	0.0	C	S	0	2	1	0	138	129	R	E	O	O	F		_____		Intake Manifold Air Too
AB	8894	08-mar-1996	453D	80500.16	80500.16	29.8	F	8	992	8	1	0	179	202	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	08-mar-1996	452C	80500.60	80514.63	0.0	R	4	882	34	975	296	171	181	M	E	F	O	6		AB_M_S__		TM #3 Stalled (High Cur
AB	8894	08-mar-1996	452B	80500.60	80514.63	0.0	R	4	882	33	825	290	171	181	M	E	F	O	6		AB_M_S__		TM #2 Stalled (High Cur
AB	8894	08-mar-1996	452A	80500.60	80514.63	0.0	R	4	885	36	994	293	171	181	M	E	F	O	6		AB_M_S__		TM #1 Stalled (High Cur
AB	8894	08-mar-1996	49CC	80506.80	80514.61	0.0	C	S	0	3	0	0	173	181	R	E	O	O	F		_____		Intake Manifold Air Too
AB	8894	08-mar-1996	453D	80518.68	80518.68	38.3	F	8	989	10	3	0	174	197	M	E	O	O	6		_B_____		FDP Or FCFP RU Is Bad
AB	8894	2501	1	8	08-MAR-1996	BRG_XY - Braking Resistor Grid															X=StkY=R #1 STACK ALL GRIDS BURNT-REPL		

imagination at work

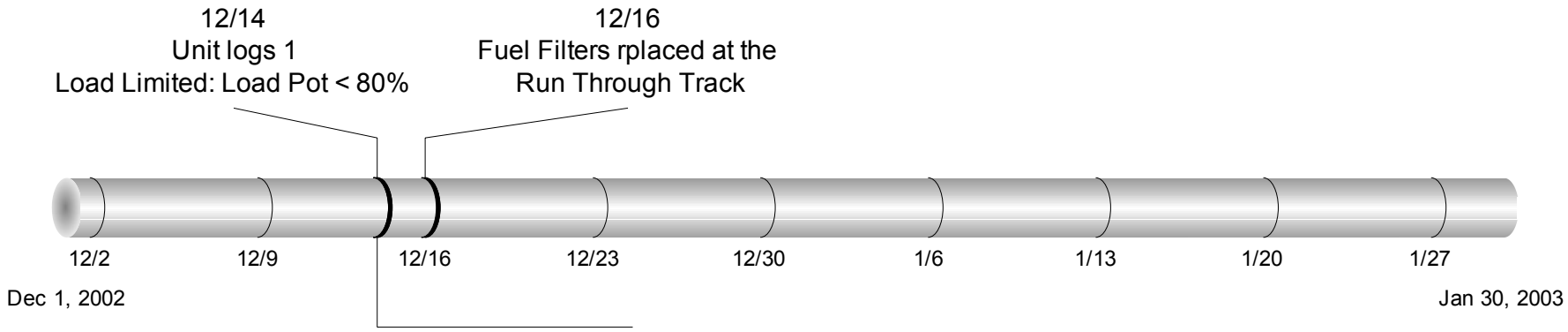
Fault codes collected over 5 days for loco #8894, leading to a repair recommendation on March 8 1996

Customer Impact - 1

SP206 AC4400 NON-EOA



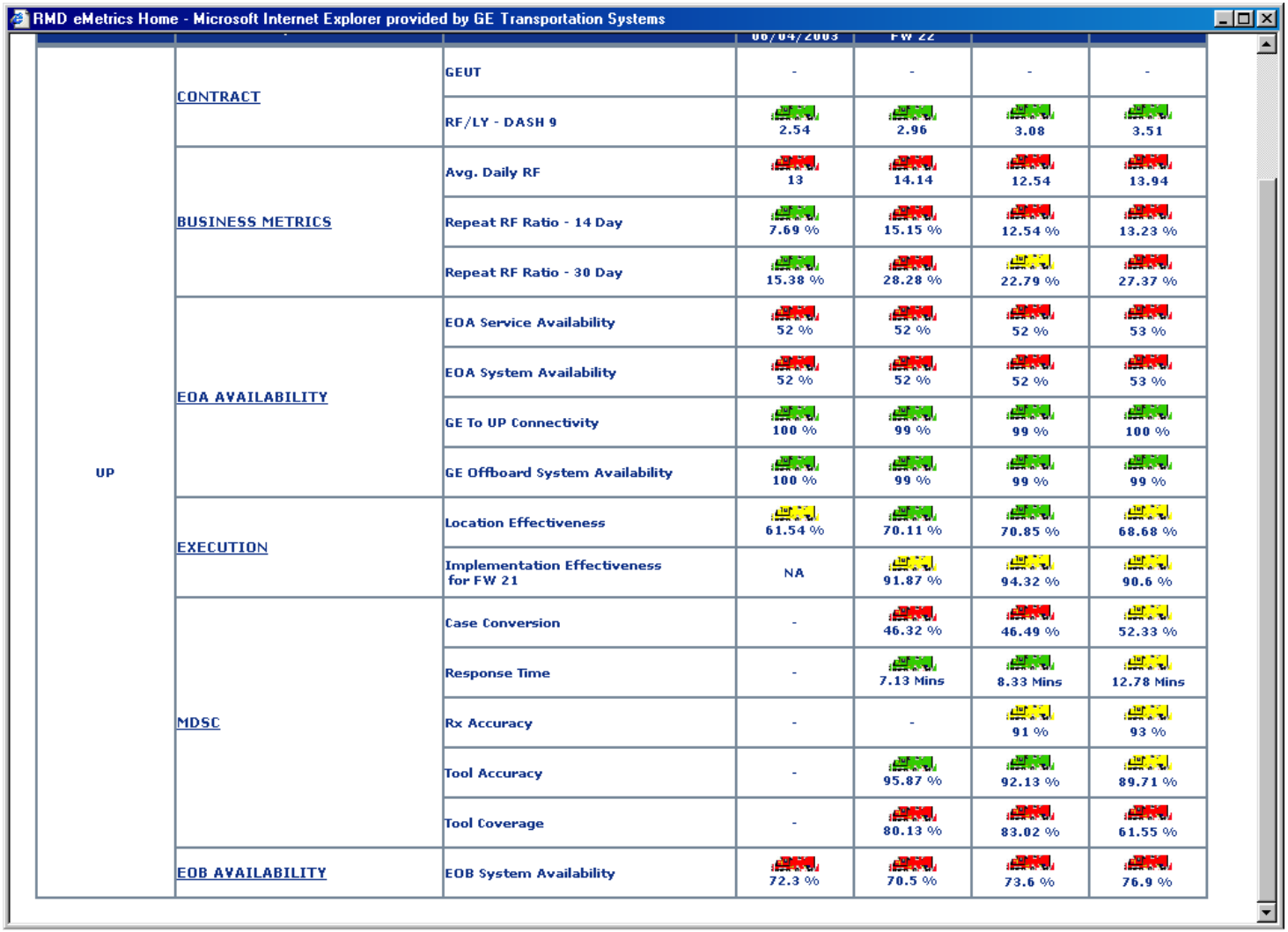
SP250 AC4400 EOA



28 Days Saved

imagination at work

Application Walkthrough

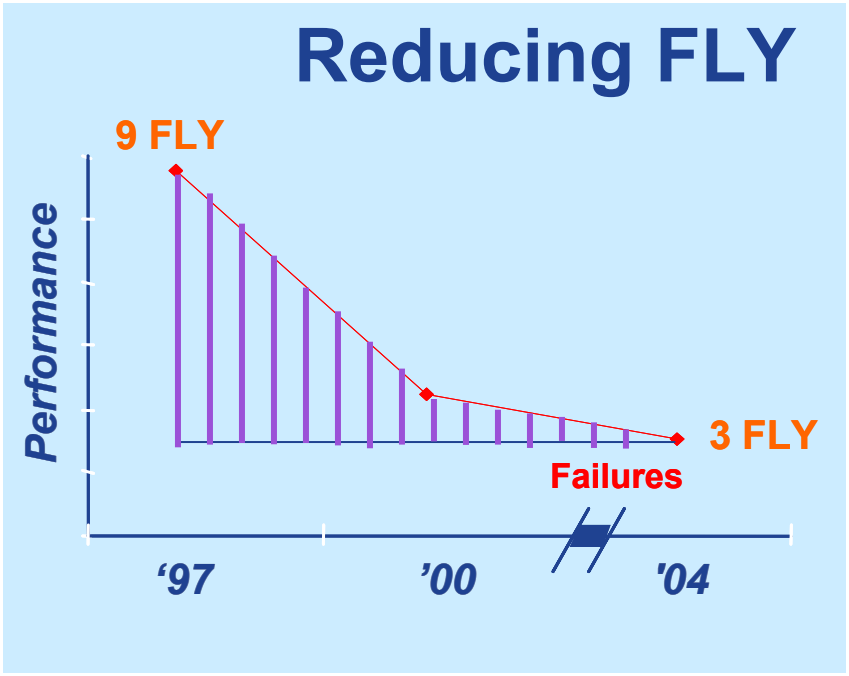


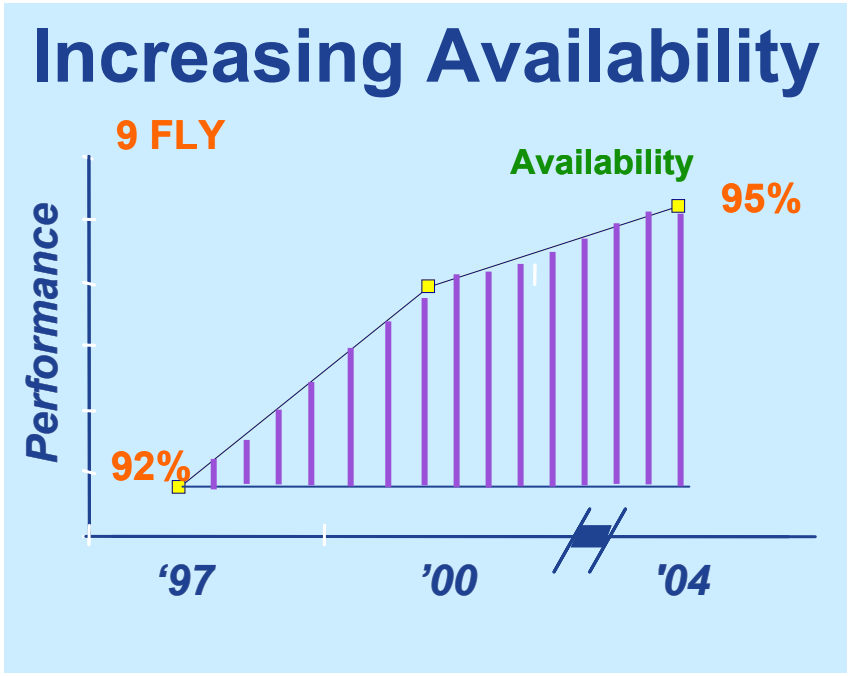
			06/04/2003	FW 22		
UP	CONTRACT	GEUT	-	-	-	-
		RF/LY - DASH 9	2.54	2.96	3.08	3.51
	BUSINESS METRICS	Avg. Daily RF	13	14.14	12.54	13.94
		Repeat RF Ratio - 14 Day	7.69 %	15.15 %	12.54 %	13.23 %
		Repeat RF Ratio - 30 Day	15.38 %	28.28 %	22.79 %	27.37 %
	EOA AVAILABILITY	EOA Service Availability	52 %	52 %	52 %	53 %
		EOA System Availability	52 %	52 %	52 %	53 %
		GE To UP Connectivity	100 %	99 %	99 %	100 %
		GE Offboard System Availability	100 %	99 %	99 %	99 %
	EXECUTION	Location Effectiveness	61.54 %	70.11 %	70.85 %	68.68 %
		Implementation Effectiveness for FW 21	NA	91.87 %	94.32 %	90.6 %
	MDSC	Case Conversion	-	46.32 %	46.49 %	52.33 %
		Response Time	-	7.13 Mins	8.33 Mins	12.78 Mins
		Rx Accuracy	-	-	91 %	93 %
		Tool Accuracy	-	95.87 %	92.13 %	89.71 %
		Tool Coverage	-	80.13 %	83.02 %	61.55 %
	EOB AVAILABILITY	EOB System Availability	72.3 %	70.5 %	73.6 %	76.9 %

Case Creation → Case Analysis → Equipment Detail → Maintenance History → Corrective Action → Feedback → Metrics

Benefits from PHM Technologies

Expert On Alert (EOA) system at GE Rail





Failures per Locomotive per Year [FLY]

- Cost for track-blockage & labor per FLY: **$17K per FLY**
-Cum.FLY reduction [1997-2004]: 6 FLY
-Cum.FLY cost reduction [1997-2004]: $102K/loco
-Cum.FLY cost reduction over fleet [1997-2004]:~ **$300MM**
(for average fleet size 3,000 locomotives)

Locomotive Availability

-Value of 1% increase in availability per locomotive: **$3.5K/loco**
-Cum.Availability Increase [1997-2004]: 3%
-Cum.Value increased Availability per loco.[1997-2004]: $10.5K/loco
-Cum.Value of Availability over fleet [1997-2004]: **~ $30MM**
(for average fleet size 3,000 locomotives)

imagination at work

Bridging the Gap: UP problems with 'Hot Trains' for UPS

(NYT: March 31, 2004)

The New York Times **Business**

EVERY DAY

Freight-Car Congestion Is Worrying Union Pacific

Michael Stravato for The New York Times

Cars and trucks headed toward downtown Houston waiting for a Union Pacific train to go through.

By DON PHILLIPS

Freight congestion has spread across the Union Pacific railroad system, especially in Southern California and the Southwest, raising concerns about delays in agricultural shipments and international trade if a solution is not found before the rail freight rush begins in late summer and fall.

Advertisement

"TONIGHT, TONIGHT, WON'T BE JUST ANY NIGHT..."

-WEST SIDE STORY

PLAN A NIGHT AT THE THEATER.

- Find a Show
- Read Reviews
- Buy Tickets

The New York Times Theater

… U.P.S. has begun a new coast-to-coast premium service that requires high-speed train shipment to Dallas, Atlanta and New York. The New York train dispatched from Los Angeles on Tuesday is particularly time-sensitive because it is scheduled to arrive in time for package delivery on Friday rather than the following Monday.

To keep the train on time on the busy, largely single-track segment between Los Angeles and El Paso, called the Sunset Route, railroad dispatchers clear other trains onto sidings far ahead of the U.P.S. train, sometimes hours ahead. At times, trains are stalled because their crews have reached the maximum tour of duty under federal law of 12 hours, and no rested crews are available. It can take a week to sort out such situations. "***The hot trains are a challenge, particularly on the Sunset***," said Robert W. Turner, Union Pacific's senior vice president for corporate relations. …

… This operating data, reported by rail companies to the Association of American Railroads, gives evidence of Union Pacific's problems. Freight cars on line, which can be used as a measure of congestion, were at a high of 325,634 in the week ended March 19. The average time for a freight car in yards has also spiked upward. At West Colton, the major yard for Southern California, the average time was up to 49.0 hours in the latest week from 30.8 hours in the first quarter of 2003. Average train speed, which was 24.8 m.p.h. in the first quarter of 2003 and 22.1 m.p.h. in February, was down to 21.5 m.p.h. in the week ended March 19.

This is more important than the slight differences might indicate. Mr. Turner said Union Pacific estimated that each decrease of one mile an hour required 250 extra locomotives, 5,000 extra freight cars and 180 extra employees to make up for the decrease in efficiency. …

Dr. Piero P. Bonissone – General Electric Global Research

PHM Technology

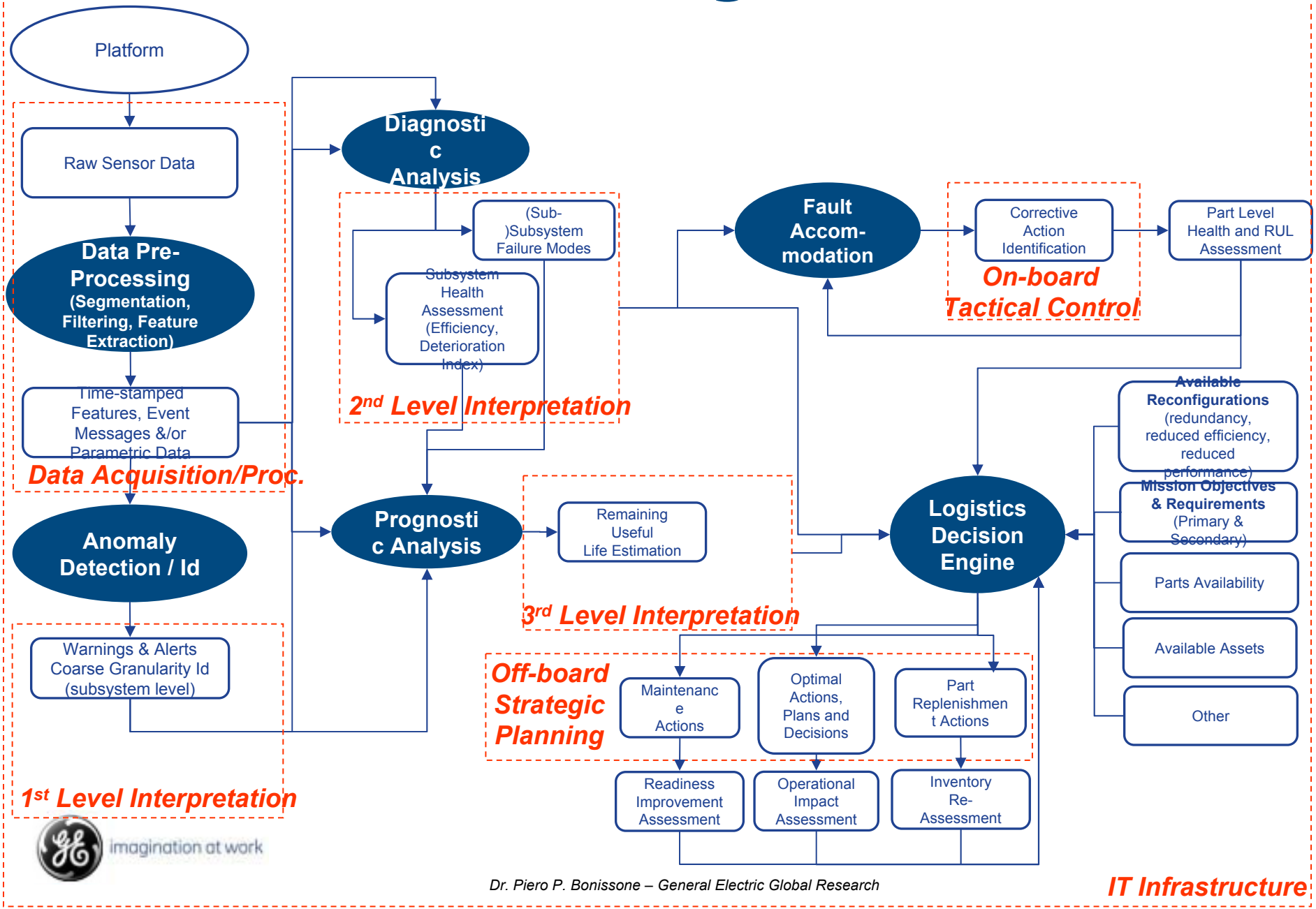
Objective
Develop algorithms for asset health assessment to support fleet-wide PHM

Goal
Address fleet-level metrics, such as safety, maintenance costs, asset readiness, reduced inventory, and operational success

Constraints
- No new sensors (using existing sensor-suite in legacy fleet)
- Platform-agnostic (data-driven approach not requiring platform-specific knowledge)

Approach
- **Anomaly Detection**
  - Provide early warning for incipient faults by characterizing regions of operational normality
  - Identify assets deviating from these regions
- **Diagnostics and Prognostics**
  - Provide assessment of sub-system health & remaining useful life for asset
- **Logistics Decision Support**
  - Select and deploy optimal decision across entire logistics infrastructure

PHM: The Big Picture



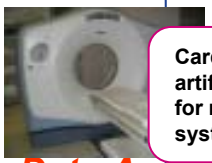
imagination at work

PHM: The Big Picture

Platform

Raw Sensor Data

Data Pre-Processing (Segmentation, Filtering, Feature Extraction)

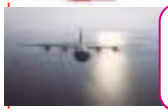


Cardiac CT image artifact reduction for multi-slice CT systems

Data Acquisition/Proc.

Anomaly Detection / Id

Event detection in reciprocating compressors

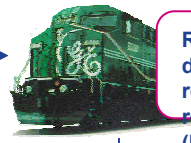


Anomaly detection in aircraft flights *[Lockheed Martin]*

1st Level Interpretation

Diagnostic Analysis

Automated interpretation of MRI calibration system test (SPT)



Remote Locomotive diagnostics and repair recommendation (EOA)

2nd Level Interpretation

Prognostic Analysis

RUL estimation for engine core comp. & Ball Bearings

Prediction of Time-to-break for paper web

Off-board Strategic Planning

Optimization of Coal-fired boilers (HR/NOx tradeoffs)

Fault Accom-modation

Rapid Fault Detection & Operability Restoration

On-board Tactical Control

Part Level Health and RUL Assessment

Logistics Decision Engine

Available Reconfigurations (redundancy, reduced efficiency, reduced performance)

Mission Objectives & Requirements (Primary & Secondary)

Parts Availability

Available Assets

Other

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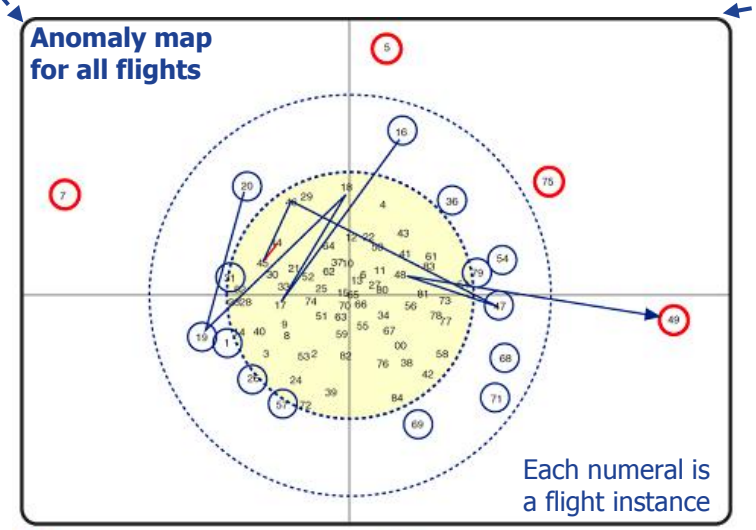
IT Infrastructure

Anomaly Detection Algorithms for PHM

Operational flight data recorded for multiple flight-instances → Algorithms for Anomaly/Novelty Detection → Anomaly Map with potentially anomalous flight-instances



1. Use operational data recorded from multiple flight instances to construct an anomaly map & detect potentially **anomalous** flights

2. Use properties of **anomaly map** to detect the onset of operational faults **early**

3. Use early detection of developing faults to drive **safety, maintenance preparedness, other metrics**

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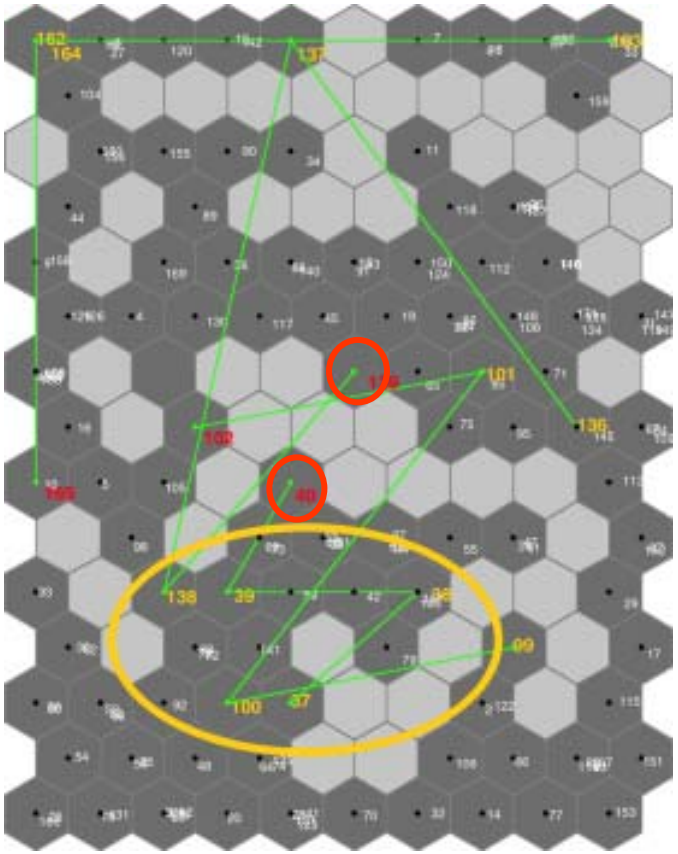
Self-Organizing Maps for Diagnostic and Prognostic Analyses

1. Train SOM on normal data to obtain normal operating envelope
2. Declare a case novel if its projection to the map falls outside the envelope



Flights known to have failures (Red numerals) generate trajectories that pass through common region

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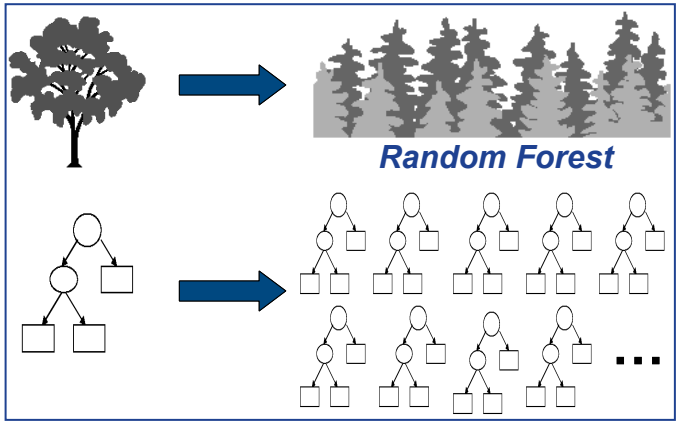
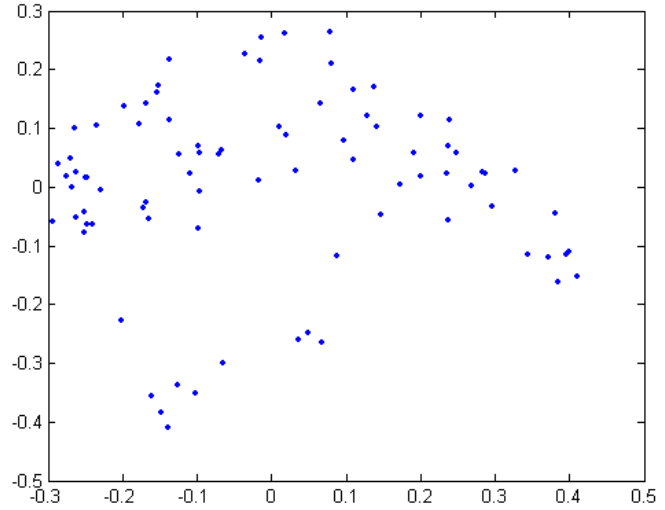
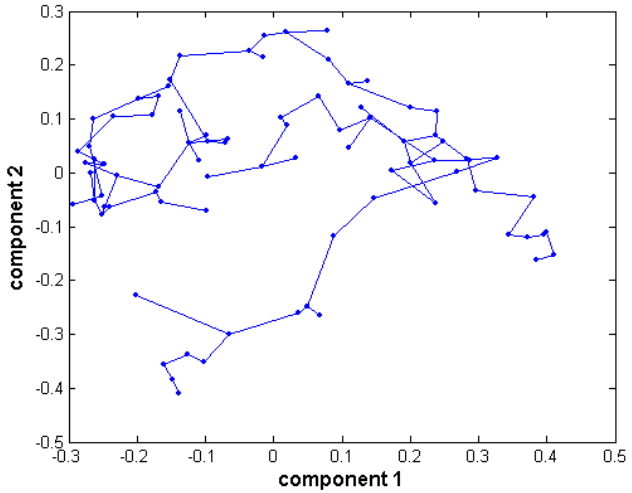
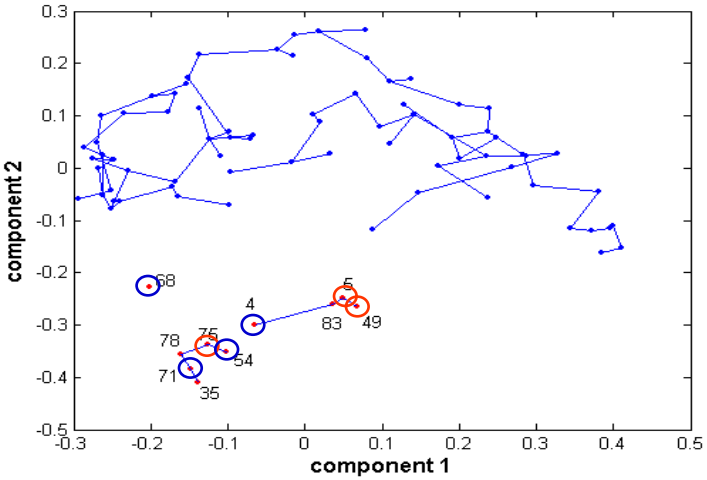
Random Forest Unsupervised Clustering for Novelty Detection









Flights known to have failures (Red dots) aren't connected to main body of Minimum spanning tree!

imagination at work

Diagnostics based on Automated Fault Signature extraction & Pattern Recognition

Key Goal

Automated extraction and application of fault signatures from time-series data for asset diagnostics

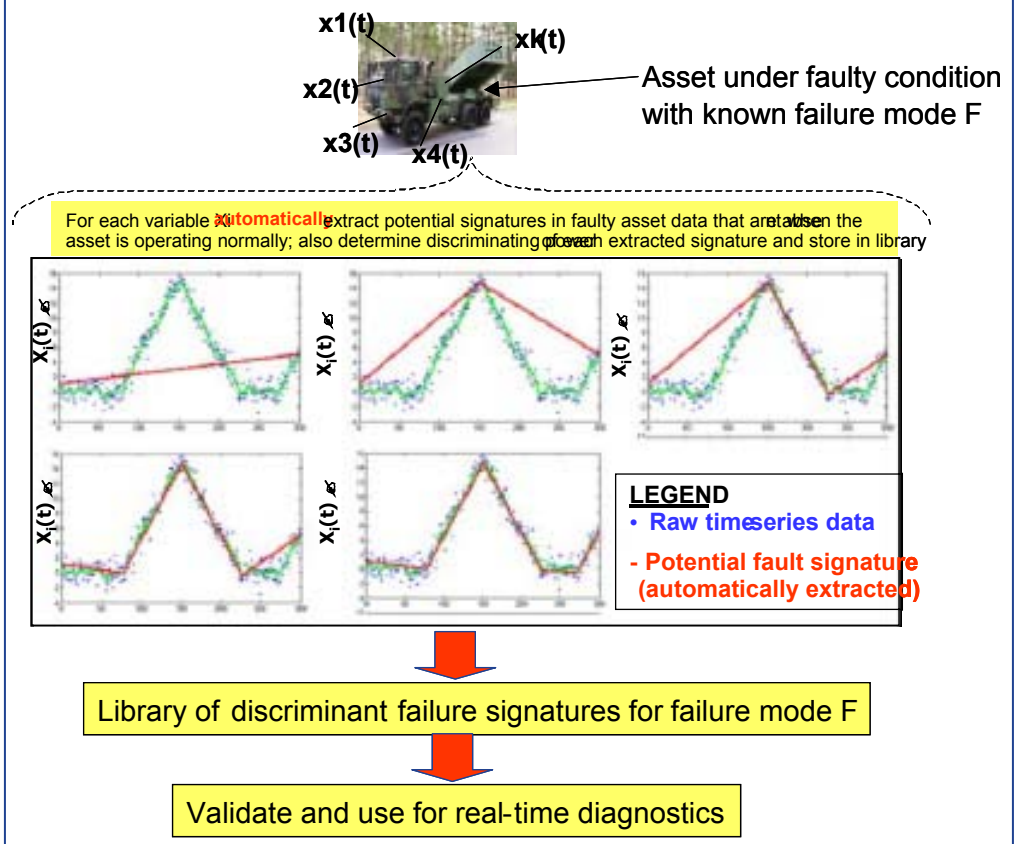
Solution

Automated signature extraction and pattern recognition based detection

- Use knowledge of existing fault condition and failure mode of asset to extract and learn potential fault signatures from multiple time-series variables
- Perform analyses to retain most discriminating set of signatures
- Apply pattern recognition techniques to locate presence or absence of failure-mode in real-time using library of signatures learned.

Benefits

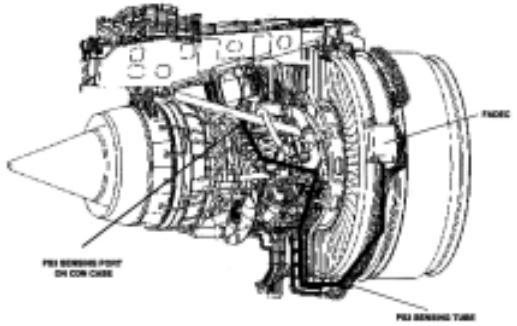
- Advanced diagnostic ability
- Potential prognostic ability

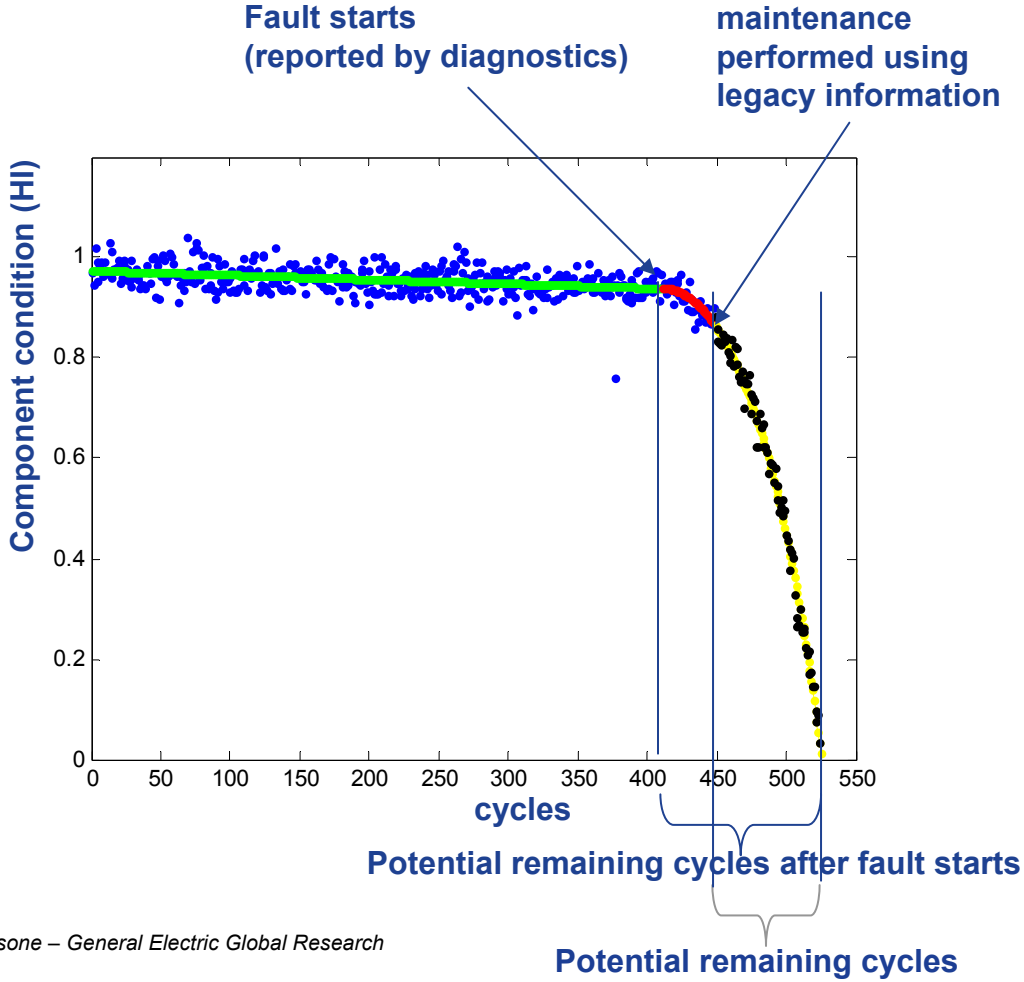


imagination at work

GE Aviation/DARPA: Equipment Prognostics

- ***Key Goal:***
  - Estimate remaining equipment life in presence of fault
- ***Solution***
  - ***1. Physics and Experience-Based Reasoner***
    - Apply detailed materials-based damage propagation model
    - Apply data-driven damage propagation model
    - Fuse estimates for reduced uncertainty and improved accuracy
  - ***2. Derive Operations-based Equipment Health***
    - Convert proximity to operational margins into equivalent equipment health
    - Track and extrapolate health when fault is present
- **Benefits**
  - Reduced maintenance cost
  - Fewer unscheduled maintenance
  - Increased TOW



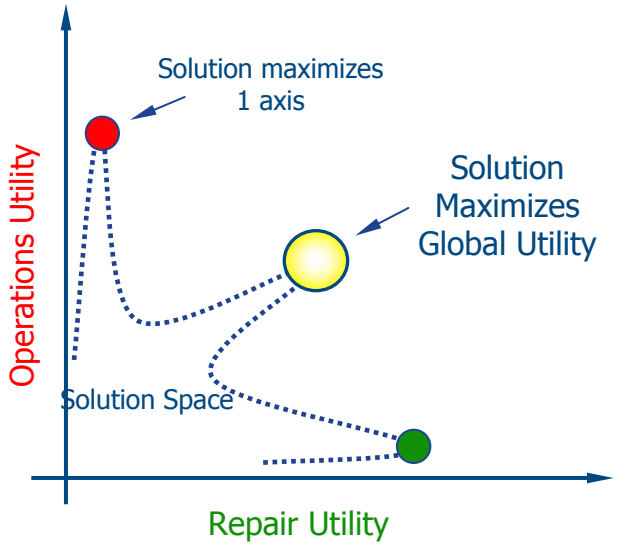


Decision Making and Health Management

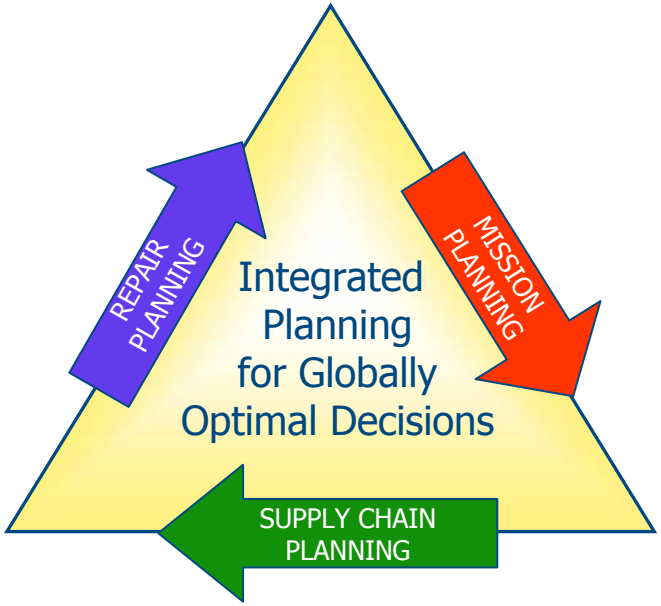
"Health Management is the capability to make appropriate decisions about maintenance actions based on diagnostics/prognostics information, available resources and operational demand."

- Andy Hess, PHM Lead for Air Systems on JSF

Decisions in Isolation
Do Not Maximize Global Utility



Integrated Planning
Maximizes Global Utility



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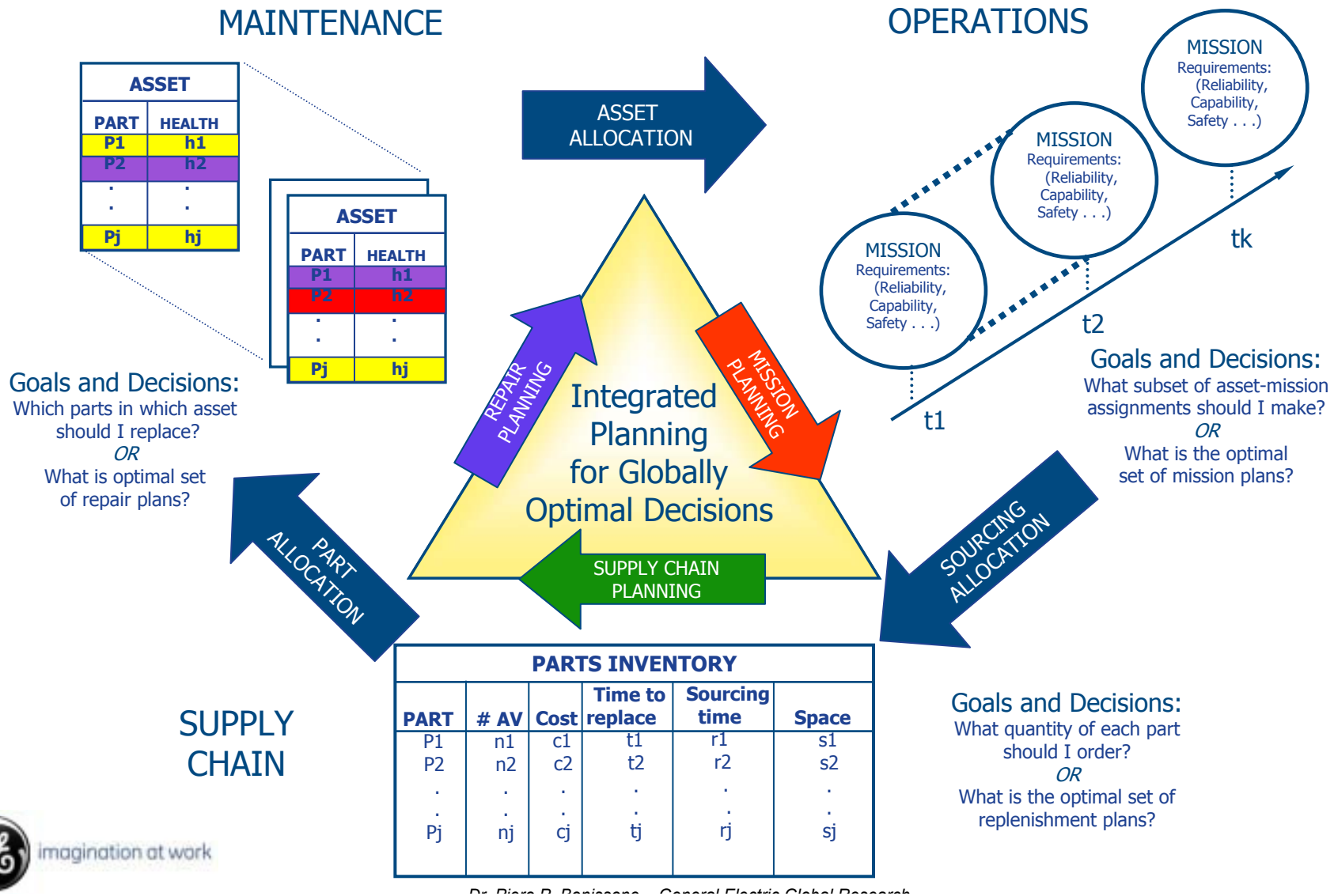
Decision Making and Health Management



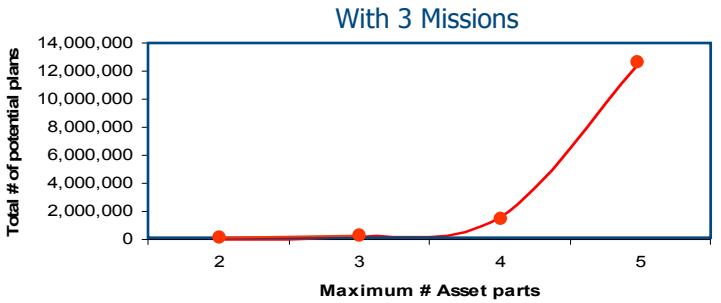
imagination at work

Integrated Decision Making in PHM: A Closer Look

Advantages of Integrated Planning

- Maximal global utility across all 3 platforms
- Increased number of satisfiable missions, mission reliability, safety, mission success rate and part availability
- Reduced sustainment costs, turnaround times, and spare requirements

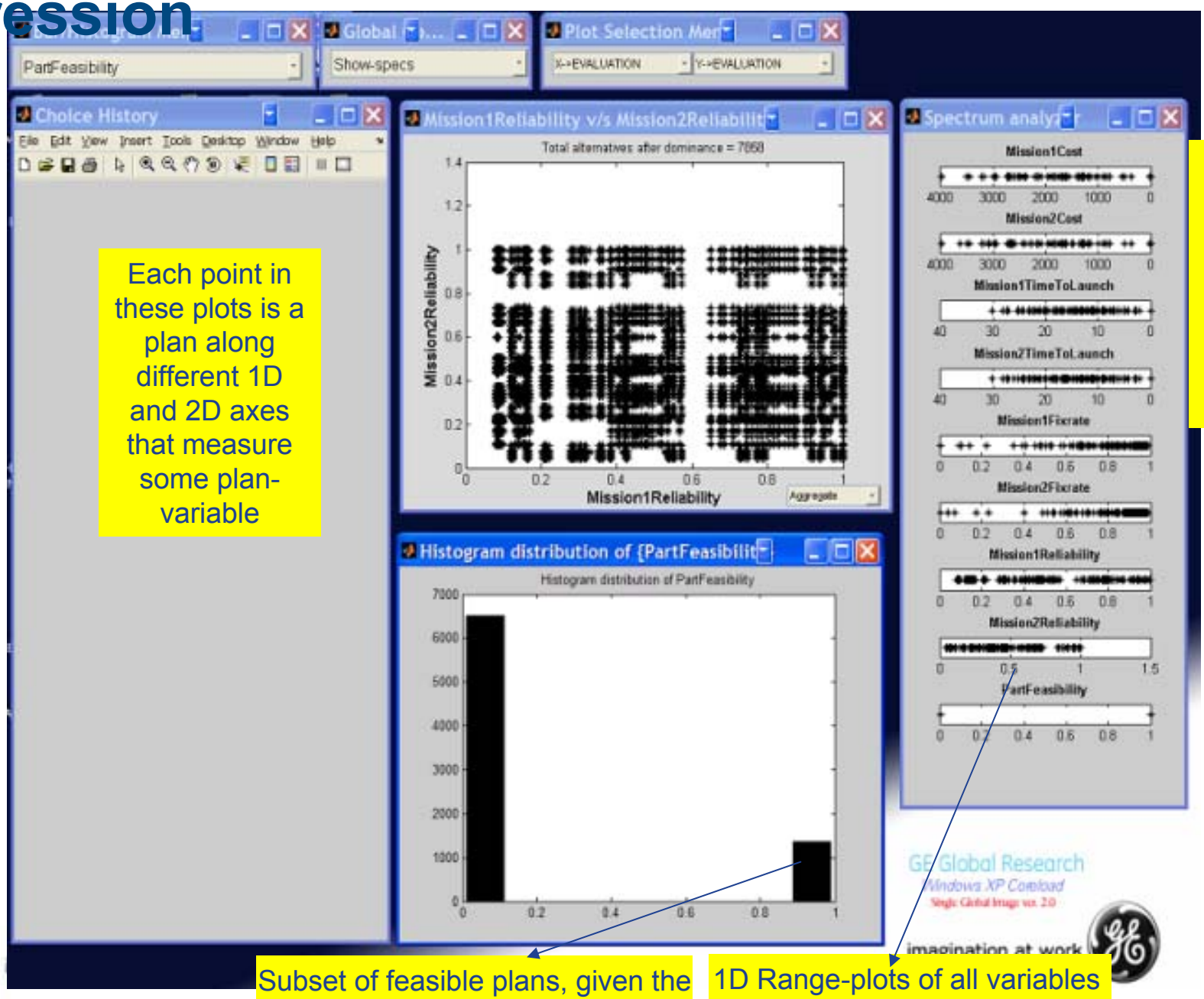
Disadvantages of Integrated Planning



With 3 Missions to be Satisfied	
Max # of Asset Parts	Total # of Potential Plans
4	24,576
5	196,608
6	1,572,864
7	12,582,912

Emphasizes the need for decision support

Interactive visualization and preference expression



Each point in these plots is a plan along different 1D and 2D axes that measure some plan-variable

- 7858 plans to begin
- All are optimal
- Only some are feasible

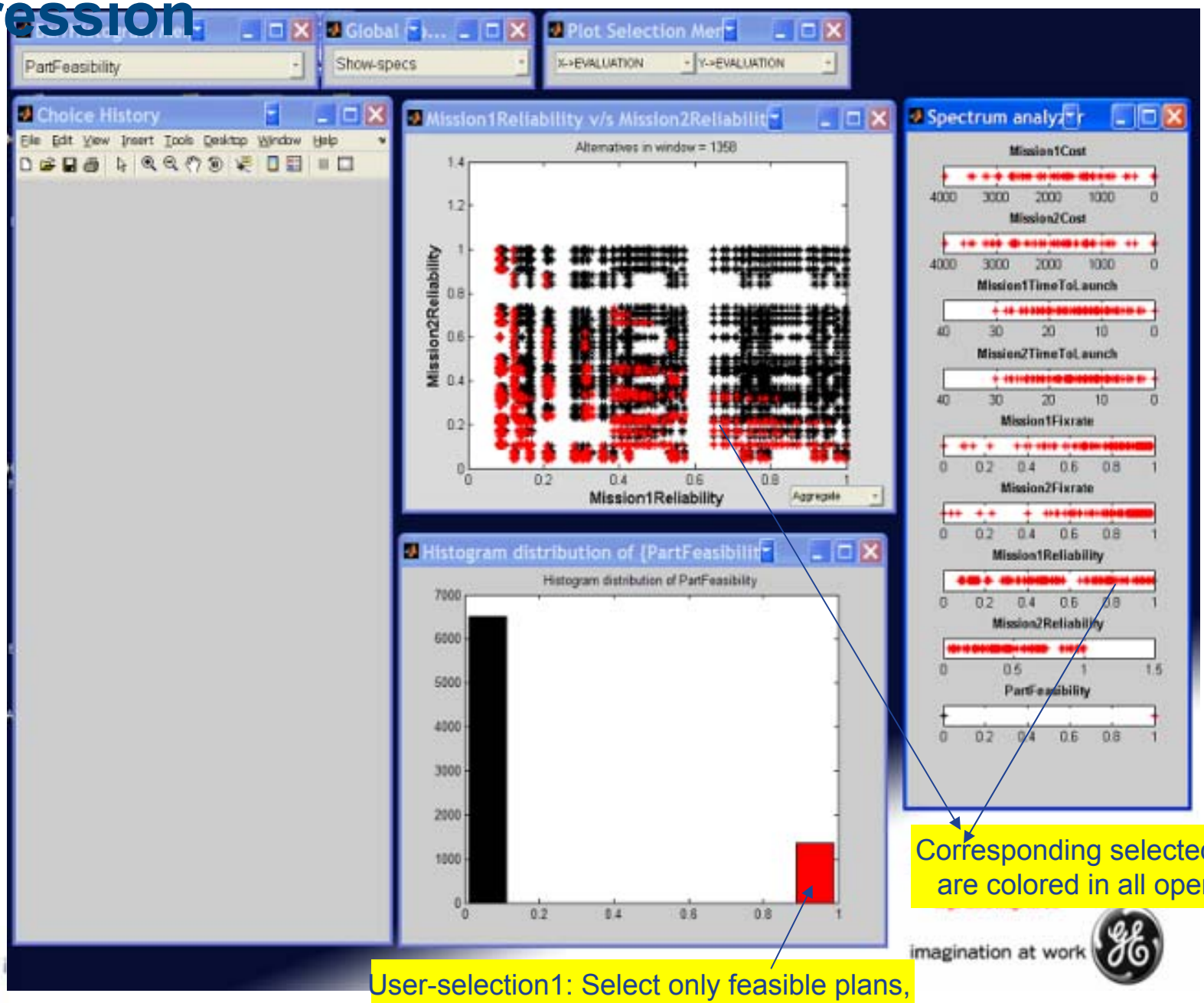
Subset of feasible plans, given the part availability (inventory)

1D Range-plots of all variables of interest to user

GE Global Research

imagination at work

Interactive visualization and preference expression



Corresponding selected points are colored in all open plots

User-selection1: Select only feasible plans, using mouse-click

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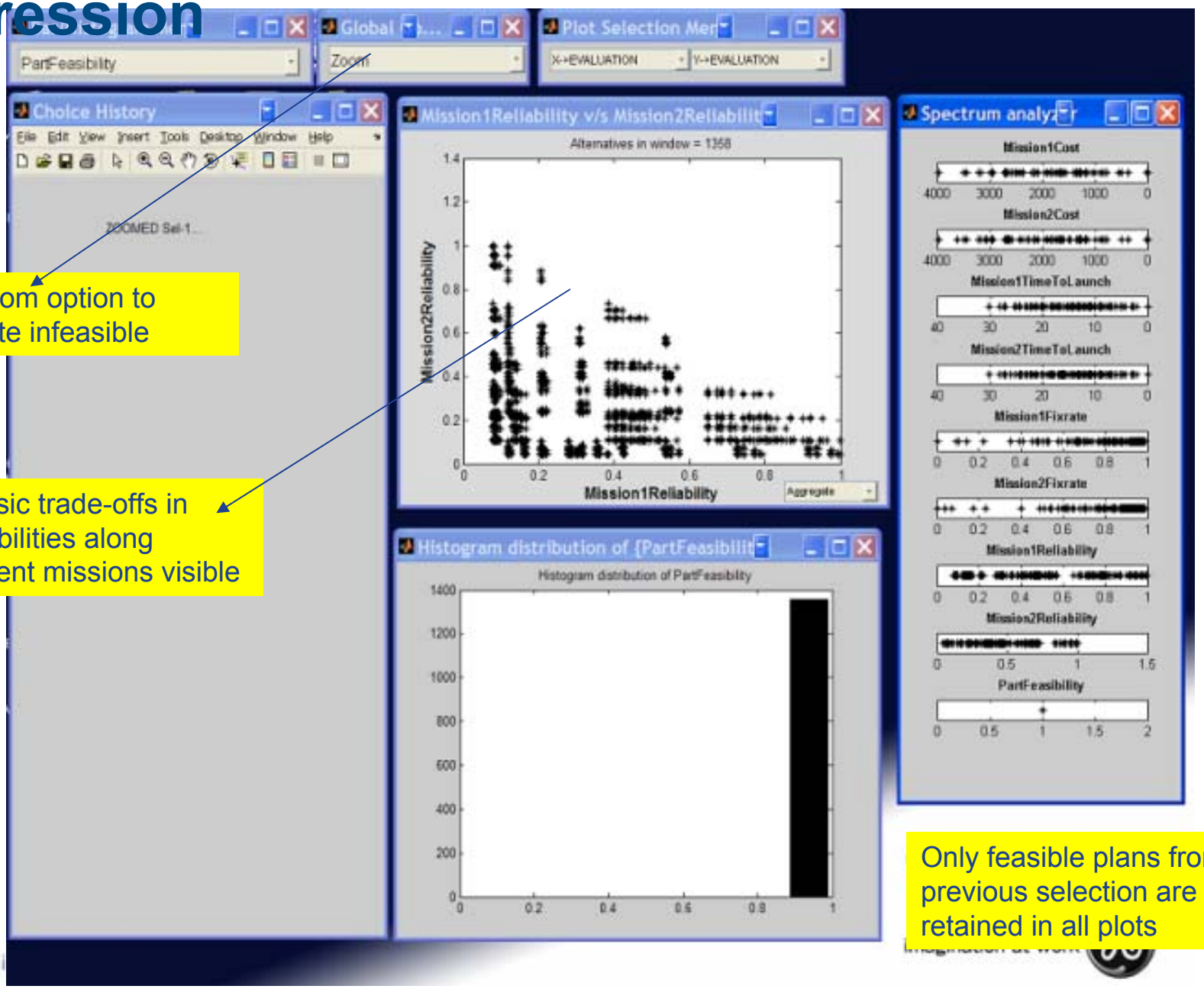
Interactive visualization and preference expression

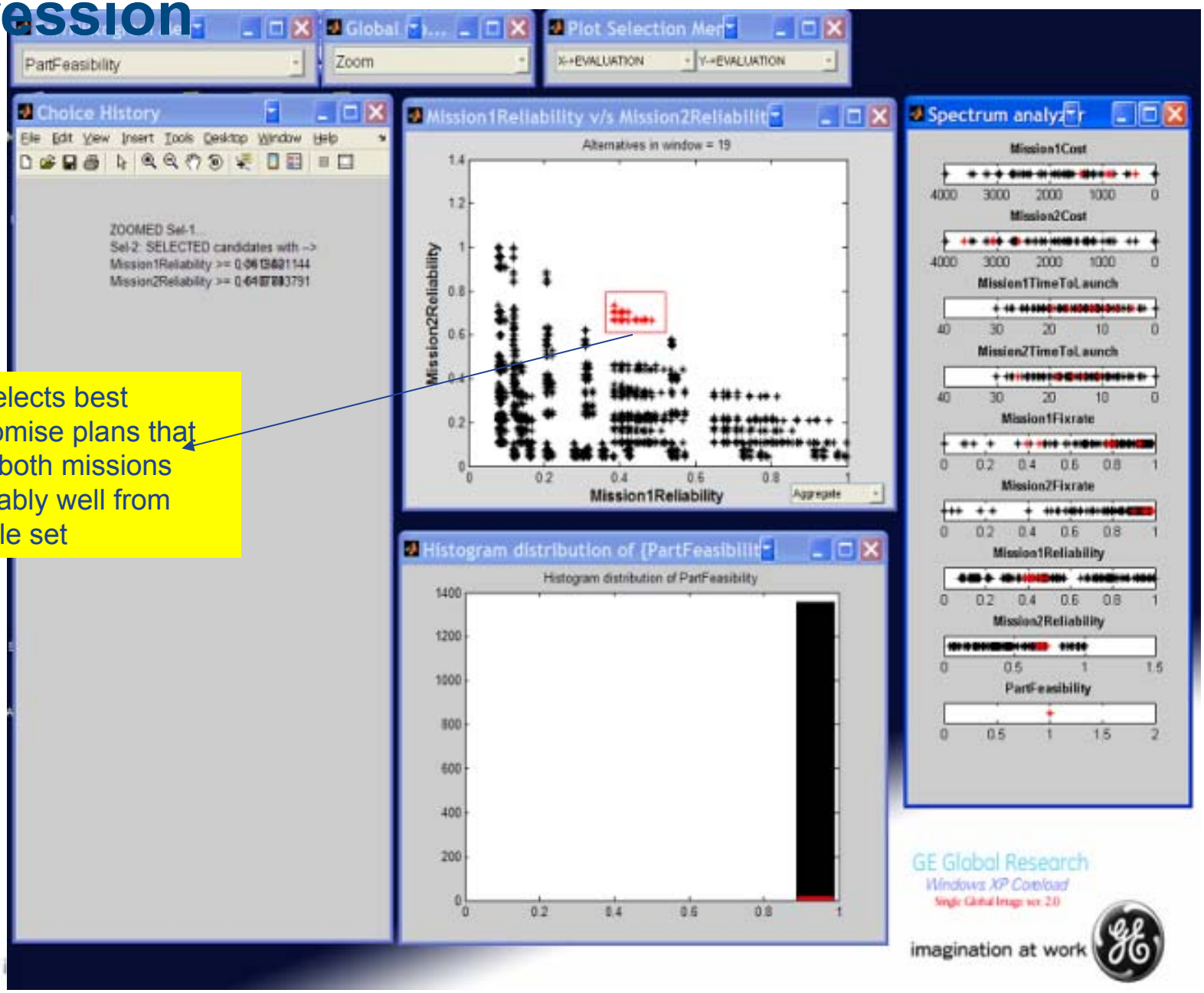


Use Zoom option to eliminate infeasible plans

Intrinsic trade-offs in Reliabilities along different missions visible

Only feasible plans from previous selection are retained in all plots

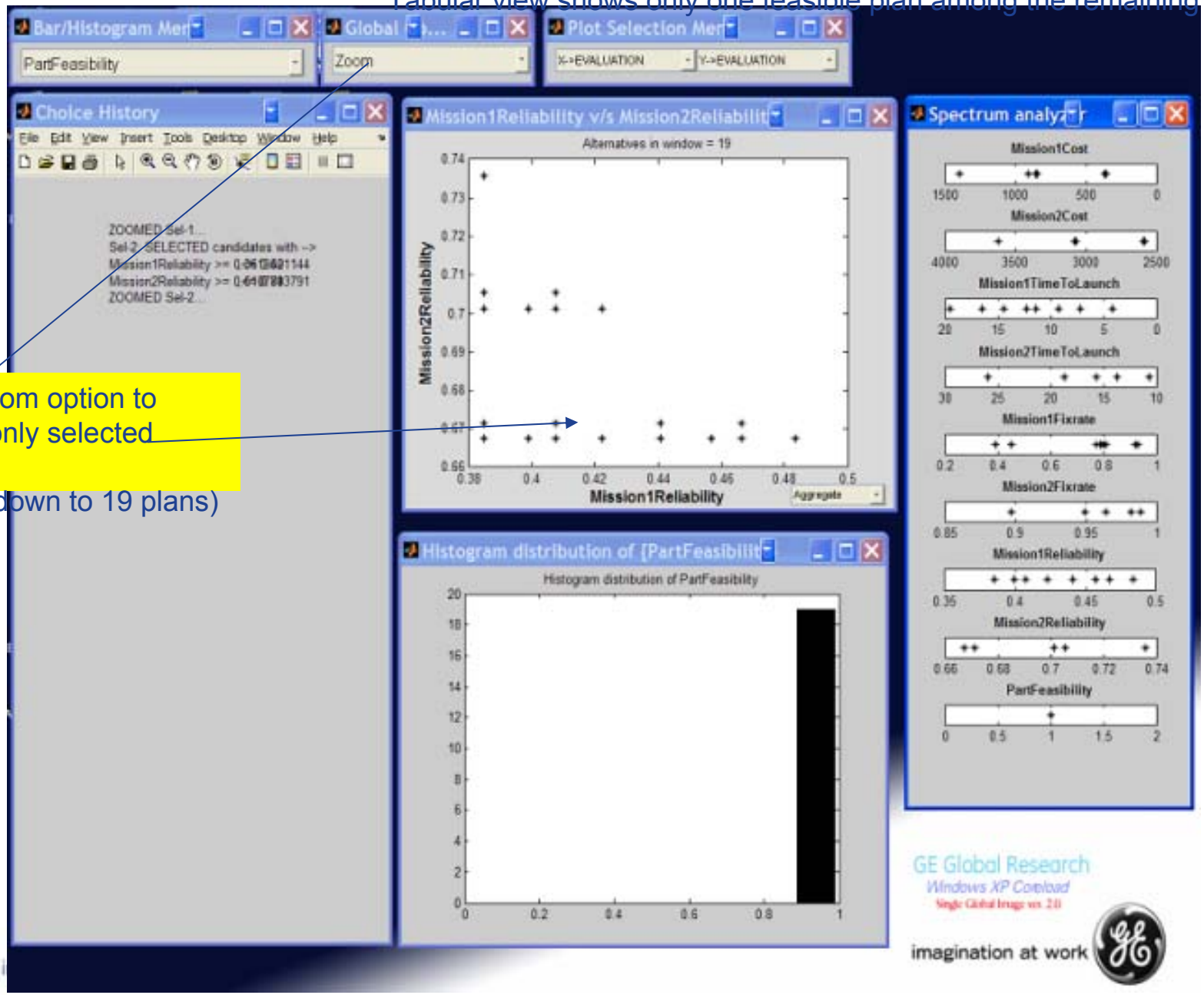
Interactive visualization and preference expression



User selects best compromise plans that satisfy both missions reasonably well from available set

GE Global Research
Windows XP Coreload
imagination at work

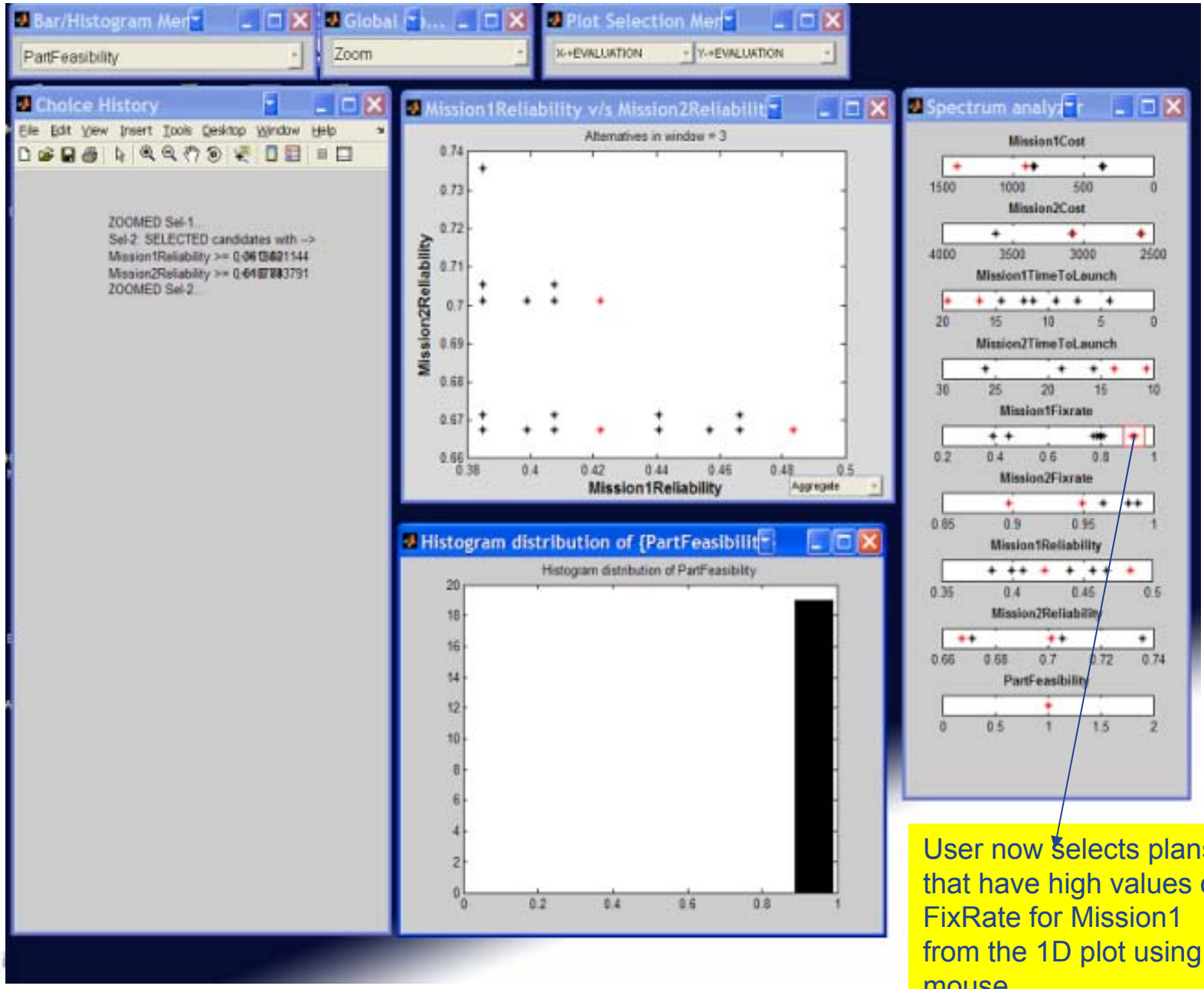
Tabular view shows only one feasible plan among the remaining ones



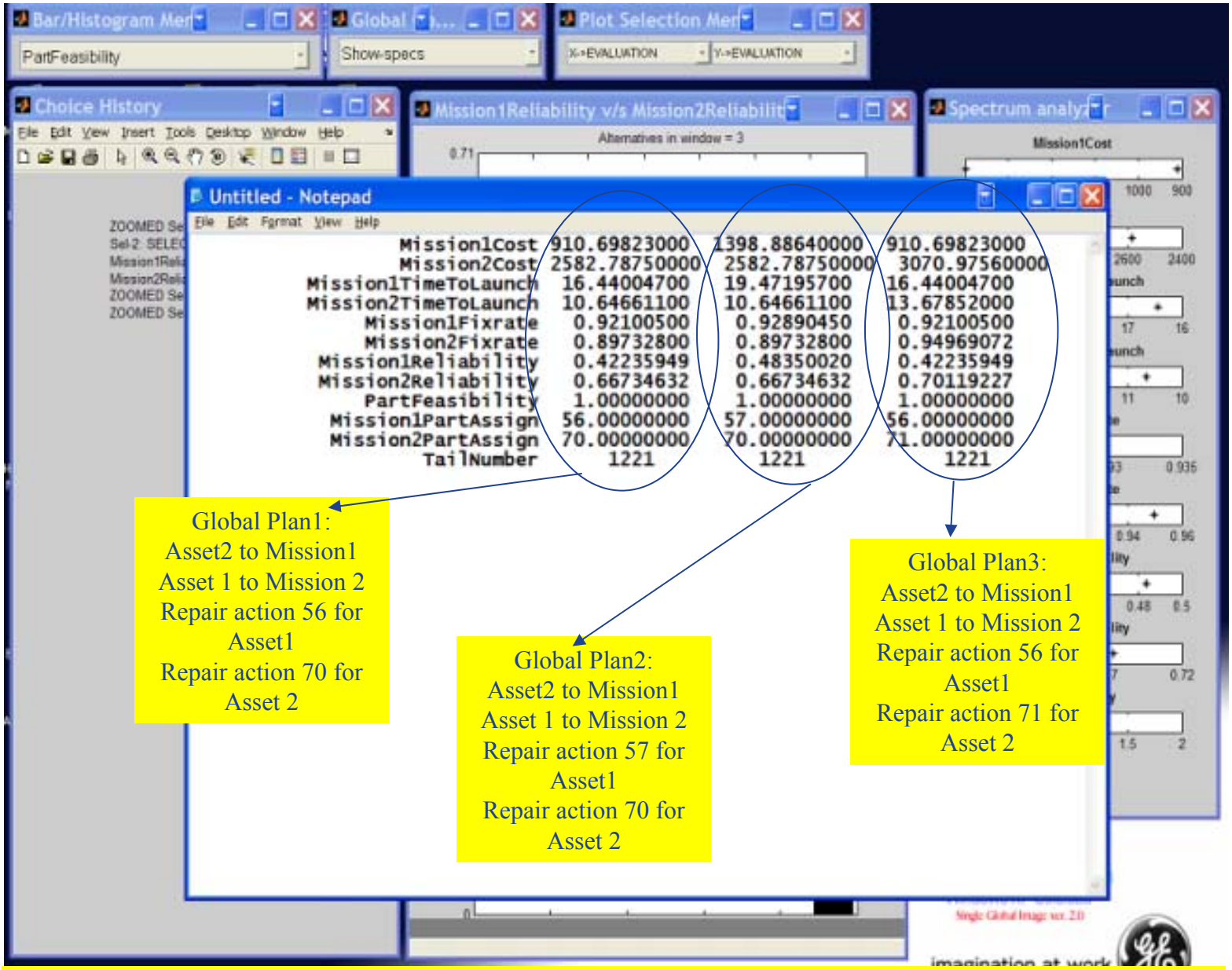
Use Zoom option to retain only selected plans
(we're down to 19 plans)

GE Global Research
Windows XP Compliant
Single Global Image ver. 2.0

imagination at work



User now selects plans that have high values of FixRate for Mission1 from the 1D plot using mouse
(we're down to 3 plans)



With only 3 plans left to examine, user looks at tabular representation of the remaining plans and selects one for deployment to maintenance and operations platform

Conclusions

- Developed broad set of algorithms for asset health assessment to support fleet-wide PHM
- Addressed various fleet-level metrics, such as safety, maintenance costs, asset readiness, reduced inventory, and operational success
- No new sensors (using existing sensor-suite in legacy fleet)
- Platform-agnostic (data-driven approach not requiring platform-specific knowledge)
- Proven Commercial Success for GE Rail: EOA™
- Extending PHM technology for military platforms under GE/LM Shared Vision

Transformation
The New Support Concept

Col Boomer

Chief Operational Support Transformation

Outline

- Changing World Environment
- New Command Architect
- CANOSCOM Mission and Roles
- Failed and Failing States
- Questions

Ad hoc approach

Default Focus

Hostile Nation States

The Bear

Conventional ← → **Asymmetric**

Non-State Actors

The Snakes

UNCLASSIFIED

UNCLASSIFIED

Adaptive

Focus

Non-State Actors

Hostile Nation States

Asymmetric

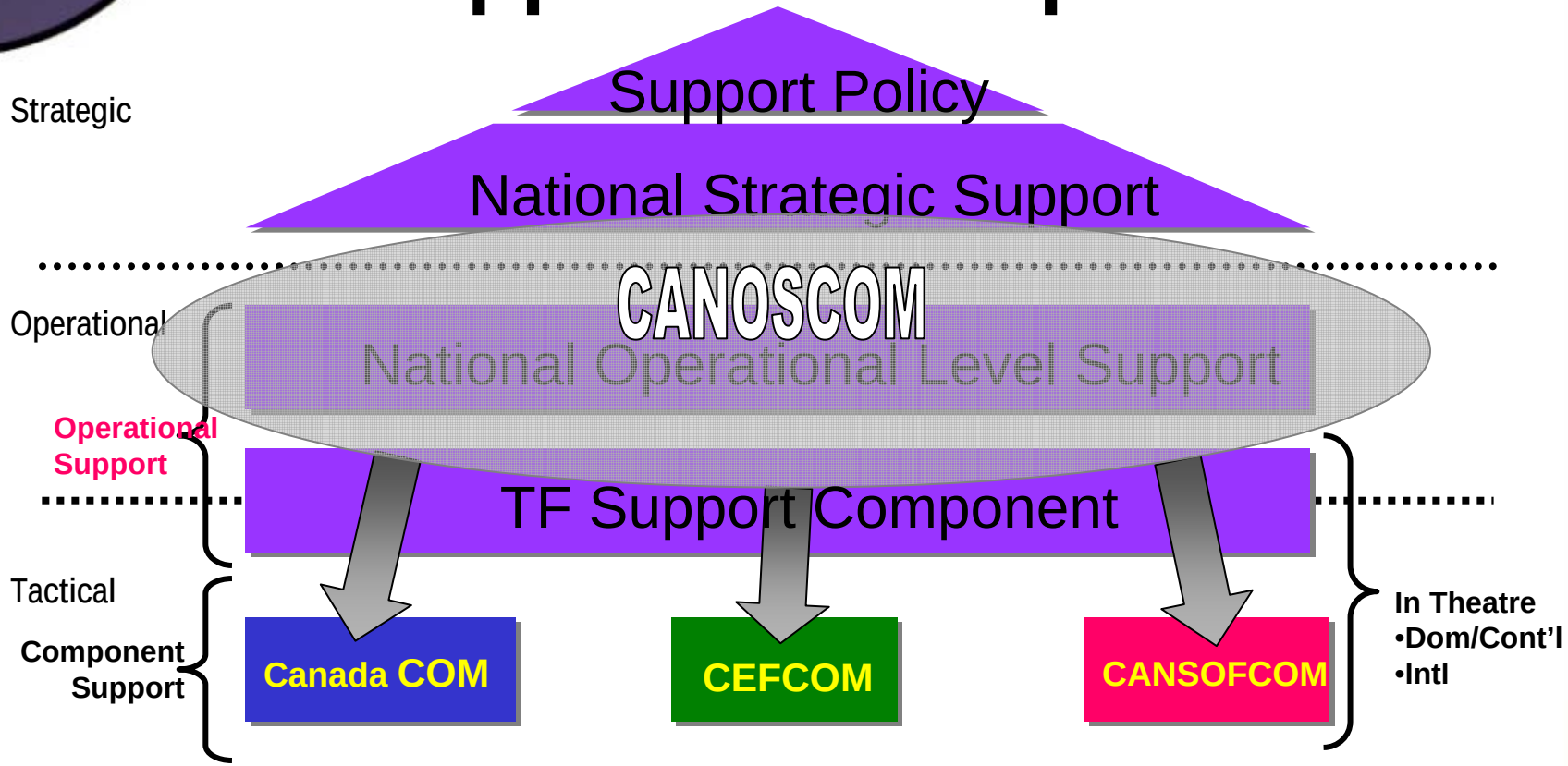
Conventional

The Bear

The Snakes

UNCLASSIFIED

Architecture for CANOSCOM Support to CF Op Comds



CANOSCOM Mission and Roles

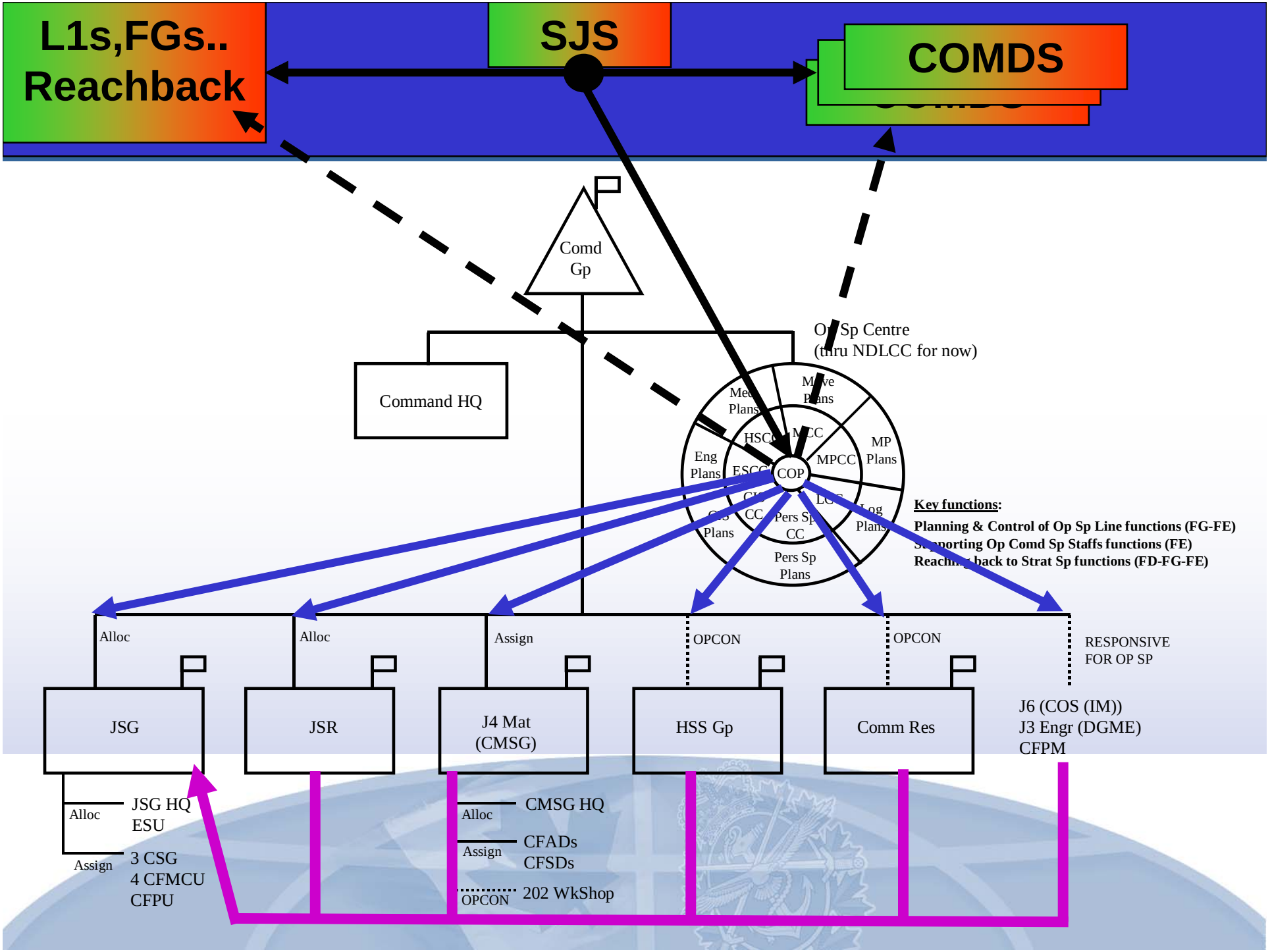
- **Mission:** Provide effective and efficient operational support to CF Operations, be they domestic, continental or expeditionary.

- **Primary Roles:**
  - Coordinate the generation of task-tailored operational support organizations for employment in theatre activation and opening, operational sustainment and mission closeout.
  - Support the operational commanders in planning and preparing for operations, including the execution of operational support at the national level.
  - Reach-back and coordinate the provision of national and strategic support.

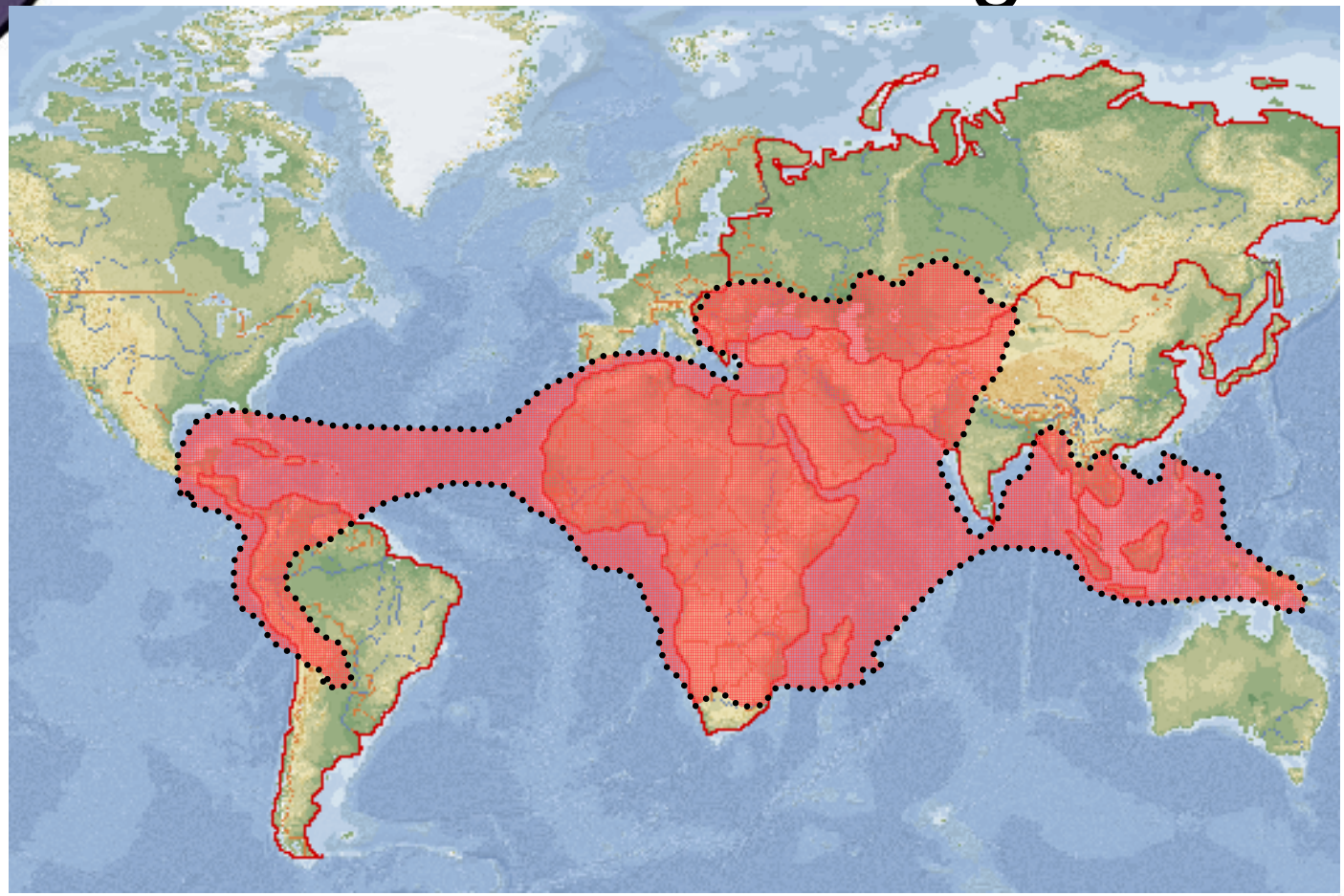
Mission Open/Close
LOCs
Force Generation
Mission Sustainment
Op Sp Capability Thrust
TASG
MCT
Mov, ISBs
POE/Ds, NRL
JTF Sp Groups/
Components
RSOM &
OP Stock Mgmt
Op Sp Planning and Advice
Op Sp
Functional Capability Thrust
Engr
Log Svcs
LEMS
HQ/C2
HSS
CIS
Contractors
Pers Svcs
MP

CANOSCOM Functional Capabilities

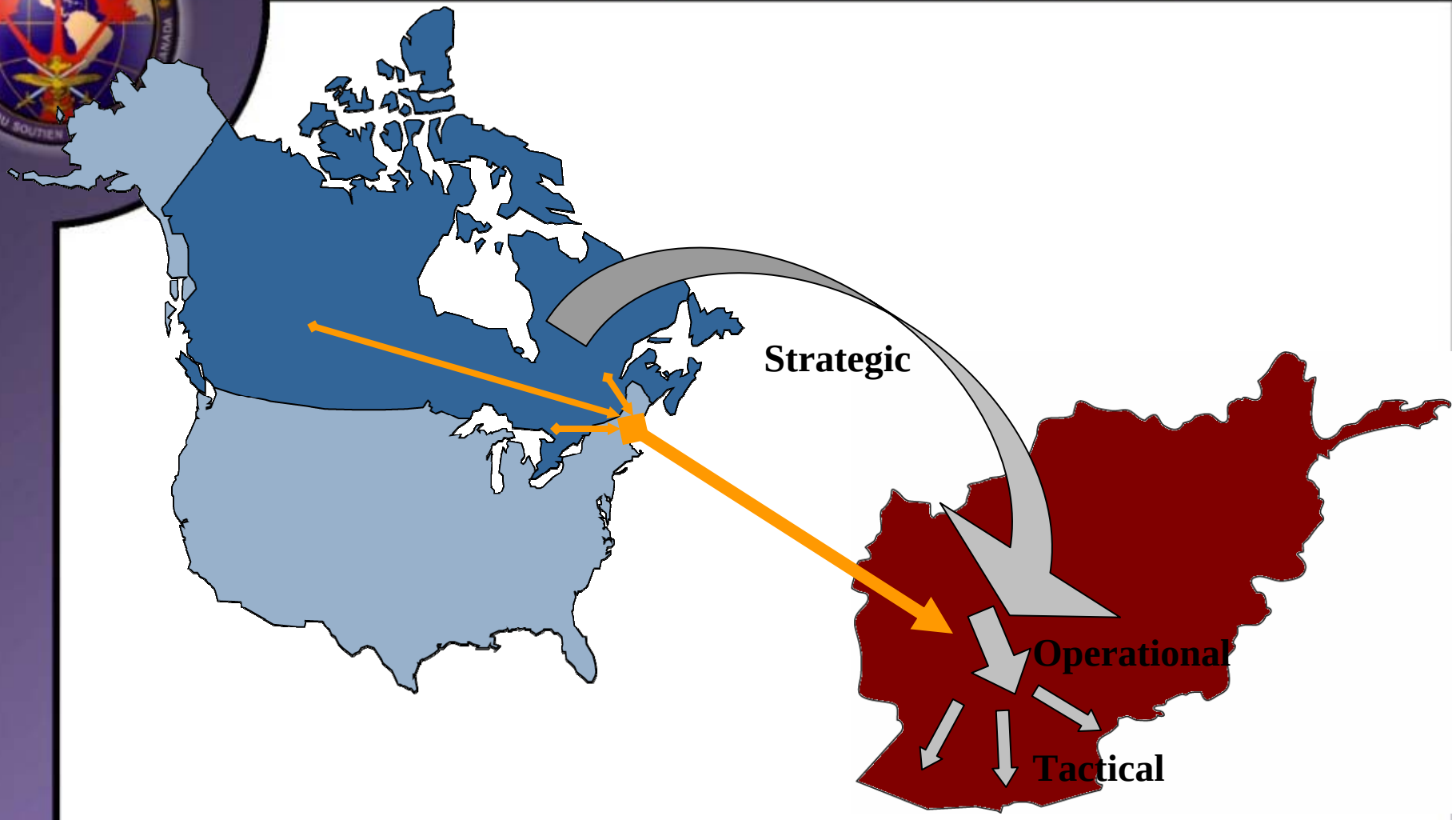
- Delivery of specialized support functions
- N*ot Service-unique*
- Direct impact on CF operations
- “General” support provided to the TF organization
- Operational support includes:
  - Military engineering (general or force support engineering)
  - Health services
  - Military police
  - Logistics (including movement)
  - Equipment maintenance (primarily general land equipment)
  - Personnel support
  - CIS support
  - C2 for the support organizations


L1s,FGs..
Reachback
SJS
COMDS
Comd
Gp
Command HQ
Op Sp Centre
(thru NDLCC for now)
Move
Plans
MCC
MP
Plans
MPCC
Eng
Plans
COP
Log
Plans
Pers Sp
CC
Pers Sp
Plans
Key functions:
Planning & Control of Op Sp Line functions (FG-FE)
Supporting Op Comd Sp Staffs functions (FE)
Reaching back to Strat Sp functions (FD-FG-FE)
Alloc
Alloc
Assign
OPCON
OPCON
RESPONSIVE
FOR OP SP
JSG
JSR
J4 Mat
(CMSG)
HSS Gp
Comm Res
J6 (COS (IM))
J3 Engr (DGME)
CFPM
Alloc
JSG HQ
ESU
Assign
3 CSG
4 CFMCU
CFPU
Alloc
CMSG HQ
Assign
CFADs
CFSDs
OPCON
202 WkShop

Failed and Failing States



Possible Intermediate Staging Basing
to Support SCTF and MSTFs?



UNCLASSIFIED

Joint

UNCLASSIFIED

Questions?

Joint Logistics Leadership Fireside Chat

- Lt Gen C.V. Christianson, USA, Director of Logistics, J4, The Joint Staff
- Lt Gen Donald J. Wetekam,USAF, Deputy Chief of Staff, Installations & Logistics
- Lt Gen Richard S. Kramlich, USMC, Deputy Commandant, Installations & Logistics
- Lt Gen Ann Dunwoody, USA, Deputy Chief of Staff, G4
- VADM Keith W. Lippert, SC, USN, Director, Defense Logistics Agency
- Lt Gen Robert Dail, USA, Deputy Commander, USTRANSCOM
- RADM Alan Thompson, USN, Director, Supply, Ordnance and Logistics Operations Division (OPNAV N41)

Strategic relationships for Joint Logistics

- In order to provide effective joint logistics, what are the necessary relationship?
  - Services focus on Logistics Readiness at best value
  - DLA control of material acquisition
  - US Transportation Command (the DPO) has oversight responsibility for the distribution process
  - Joint Staff serves a coordinating role
  - Regional Combatant Commanders or their subordinate commands serve as the Joint Force Commander. Are they the customer?
- Does the operational environment alter the relationship?

How can the LOG Chiefs drive the imperatives for success?

- Unity of Effort
  - Appropriate capabilities and authorities
  - Shared Awareness across the logistics domain
  - Common measures of performance
- Domain Wide Visibility
  - Connectivity
  - Standard enterprise data architecture fostering warfighter confidence
  - Global focus over the processes that deliver support to the JFC
- Rapid and Precise Response
  - Speed
  - Reliability
  - Visibility
  - Efficiency

Improving Defense Logistics

Supply Chain Synergy

National Defense Industrial Association Conference

LTG C.V. Christianson
Director, Logistics (J-4)
Joint Staff
19 April, 2006

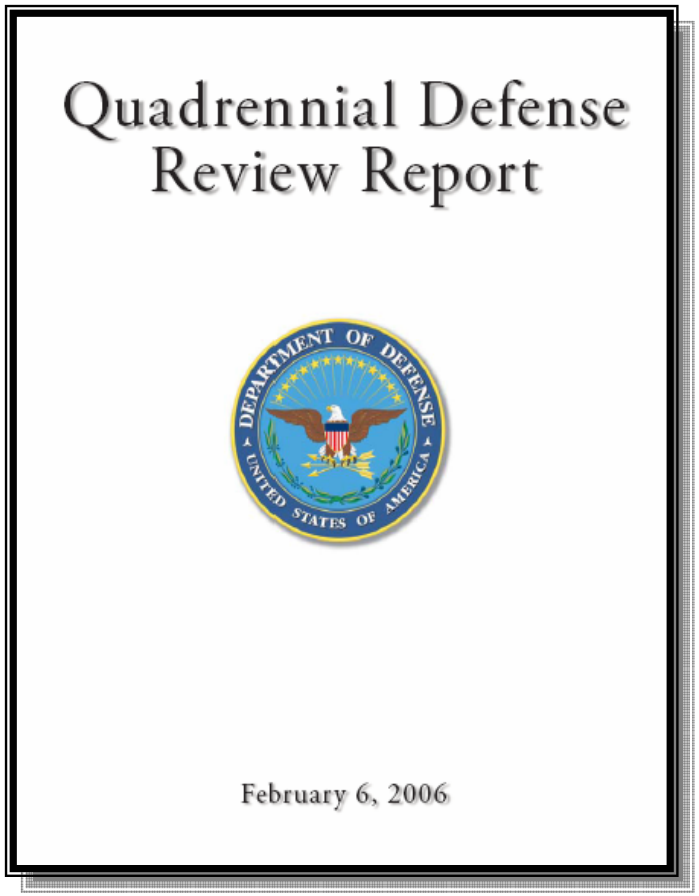
AGENDA

- **The Defense Logistics Environment**
  - o *Mandate, Scope, Framework*
- **The Defense Supply Chain**
  - o *Processes, Players, Deliverables*
- **Measuring Success**

THE ENVIRONMENT – OUR MANDATE

"Just as U.S. forces are becoming more agile and capable of rapid action and are exploiting information advantages to increase operational effectiveness, . . . processes that support them need to develop similar attributes."

- Quadrennial Defense Review, 2006



THE ENVIRONMENT - SCOPE

- Over 100,000 active suppliers
- Over 30,000 DOD customers
- 20 Maintenance Depots
- 26 Distribution Depots
- 14 Inventory Control Points
- 2 Strategic Cargo Consolidation Points
- 17 military sea/11 military aerial ports (CONUS)
- 27 military sea/32 military aerial ports (OCONUS)

THE ENVIRONMENT - ATTRIBUTES

- **Widely dispersed operations** – *Demands a globally-distributed concept of support*
- **Increased contractor support** – *210 contractors with an Army Brigade; multiple supply chains; complicated tactically*
- **A new enemy** – *Knows that our logistics capability gives us staying power*
- **Joint, inter/intra-agency & multinational** – *Scope & complexity has expanded dramatically*
- **Unsecured LOCs** – *Entire logistics pipeline is a target*
- **Resource Pressure** – *We must become more efficient*

THE ENVIRONMENT - FRAMEWORK

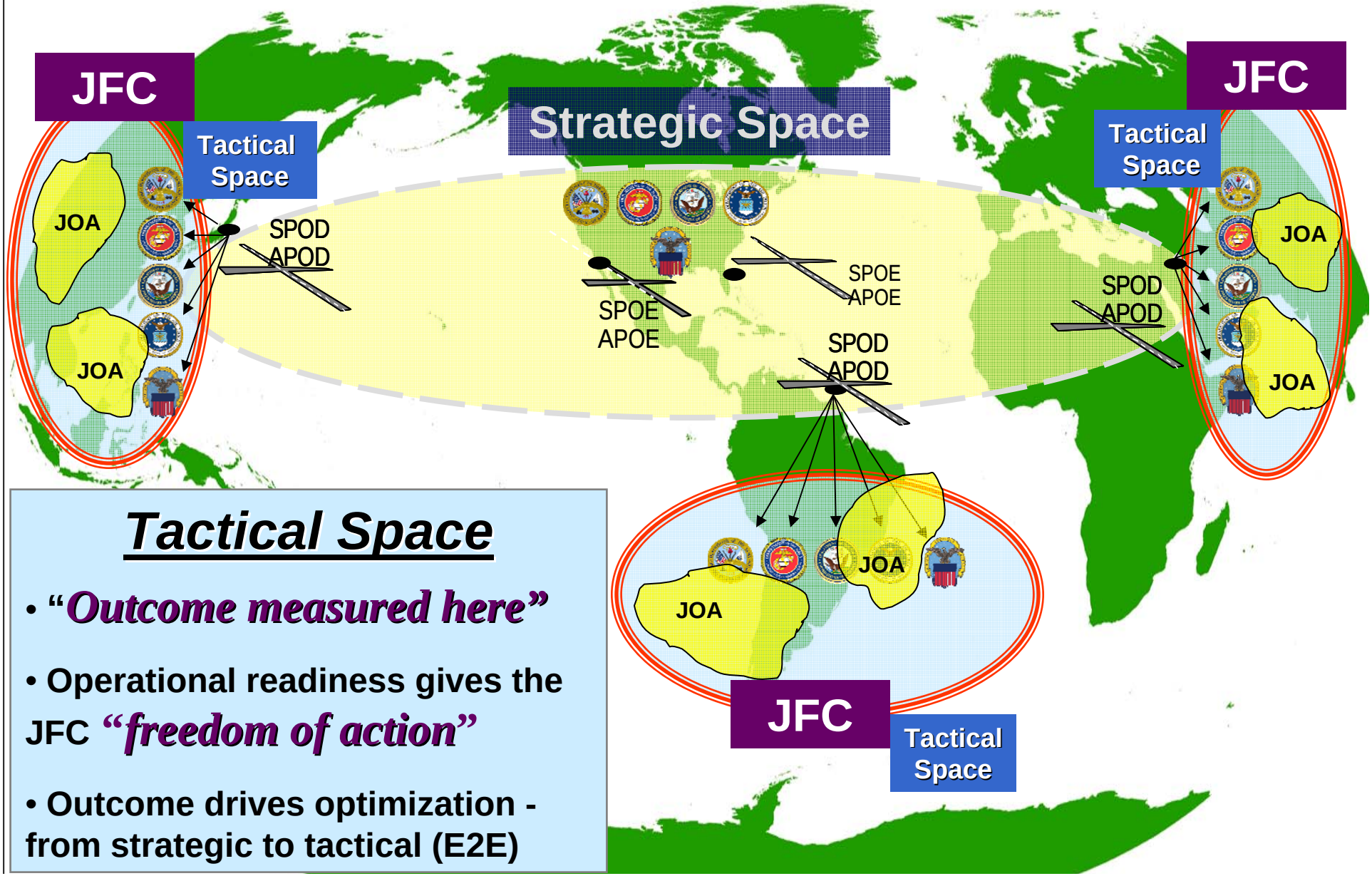
Strategic Space

- **Industrial base (gov't & industry) capacity enables sustained operations**
- **E2E processes drive efficiencies across Services, Agencies & commercial sectors**
- **"*Optimized for JFC outcomes*"**

"The end for which a soldier is recruited, clothed, armed, and trained, the whole objective of his sleeping, eating, drinking, and marching is simply that he should fight at the right place and the right time."

Major-General Carl von Clausewitz,
On War, 1832

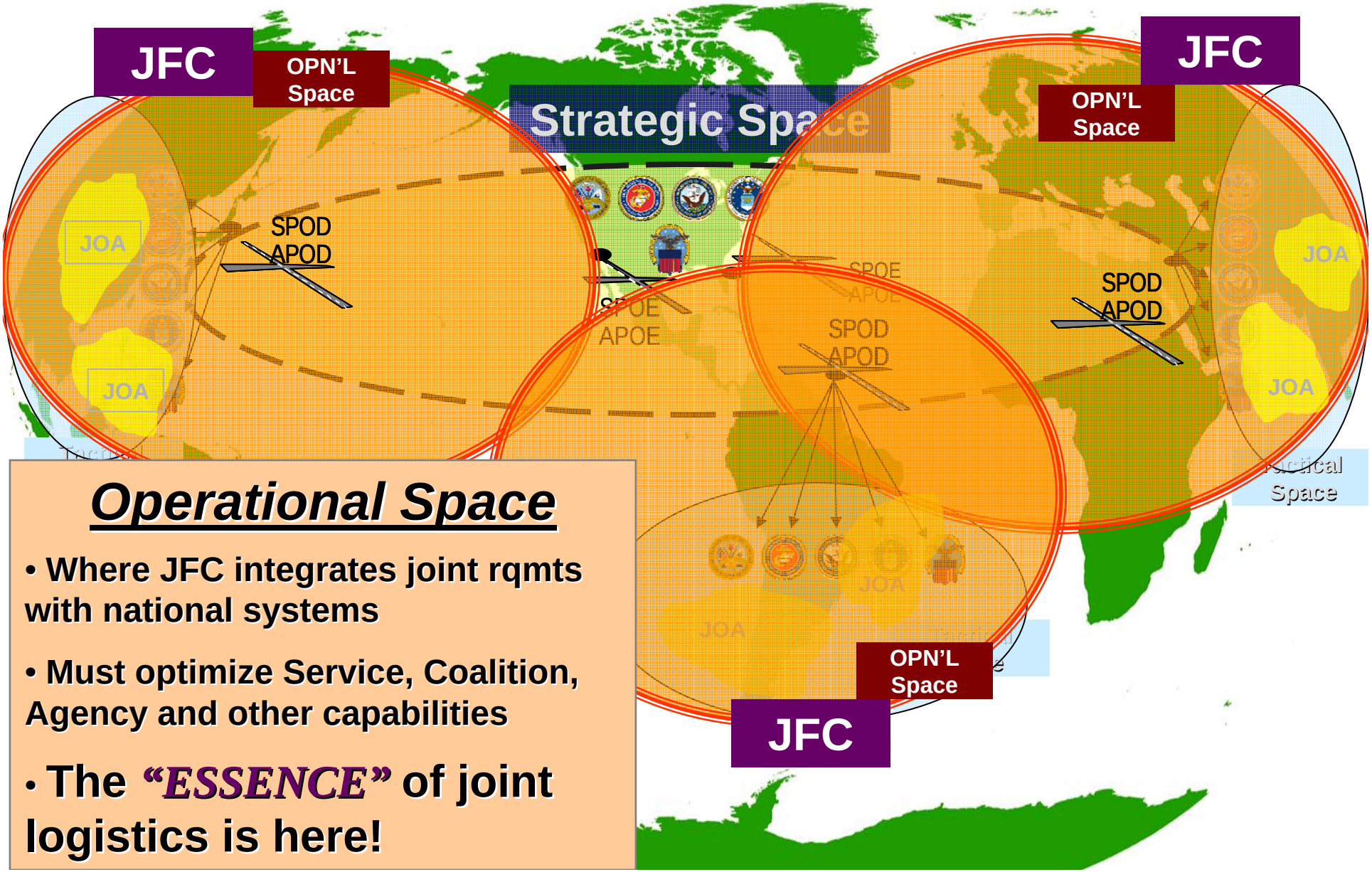
THE ENVIRONMENT - FRAMEWORK



Tactical Space

- "*Outcome measured here*"
- Operational readiness gives the JFC "*freedom of action*"
- Outcome drives optimization - from strategic to tactical (E2E)

THE ENVIRONMENT - FRAMEWORK



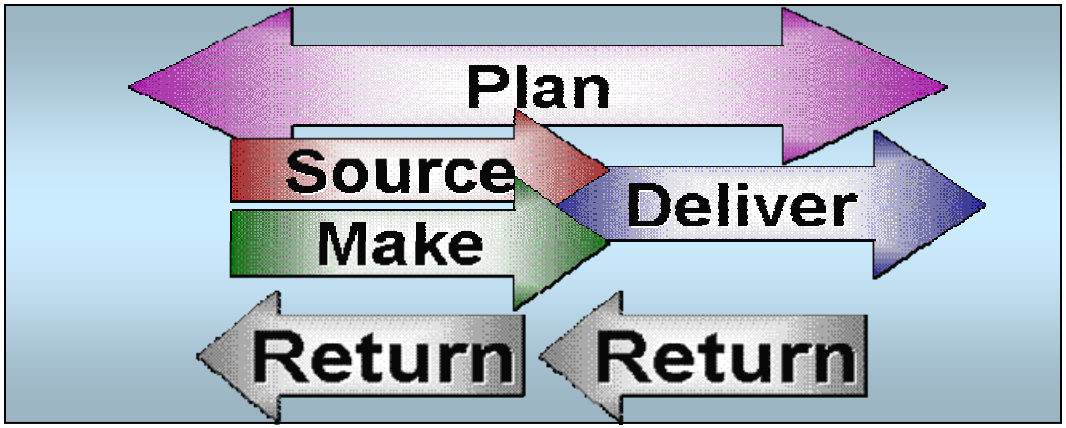
Operational Space

- Where JFC integrates joint rqmts with national systems
- Must optimize Service, Coalition, Agency and other capabilities
- The *"ESSENCE"* of joint logistics is here!

DEFINING THE SUPPLY CHAIN

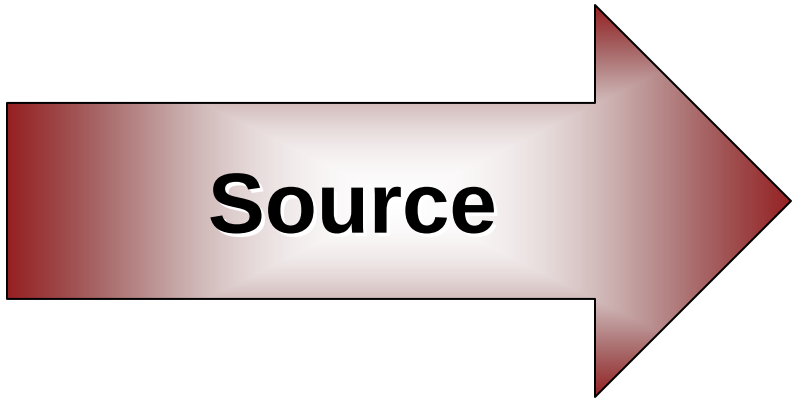
Supply Chain Operations Reference (SCOR) Model

- Widely used to *describe* the supply chain
- Common framework & language
- Comprised of five standard processes
- Uses standard metrics to measure performance



"The DOD Components shall use the supply chain operational reference processes of Plan, Source, Maintain/Make, Deliver, and Return as a framework for developing, improving, and conducting material management activities." - DOD 4140.1R, DOD Supply Chain Material Management

SUPPLY CHAIN PROCESSES



- **Processes that procure goods and services to meet demands**
- **Includes activities involved with material acquisition and source infrastructure**
- **Obtaining, receiving, inspecting, holding, and issuing material**

THE PLAYERS & DELIVERABLES

Source

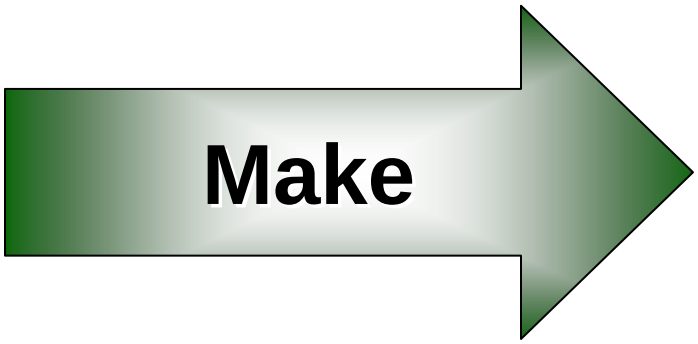
Players

DLA GSA Services Industry JFCOM

Deliverable

Perfect Order Fulfillment

SCOR MODEL



- **Processes that transform product to a finished state to meet scheduled and unscheduled demand; includes repair of unserviceable assets**
- **Schedule production activities, produce and test, package, and release product for delivery**
- **Manage rules, performance, data, equipment and facilities, and production network**

THE PLAYERS & DELIVERABLES

Make

Players

Services Industry

Deliverable

Logistics Readiness at Best Value

SCOR MODEL

- **Process that provides goods and services to meet scheduled and unscheduled demand, and delivery infrastructure**
- **Order management from processing customer inquires to routing shipments**
- **Manage business rules, information, and finished product inventories**

THE PLAYERS & DELIVERABLES

Deliver

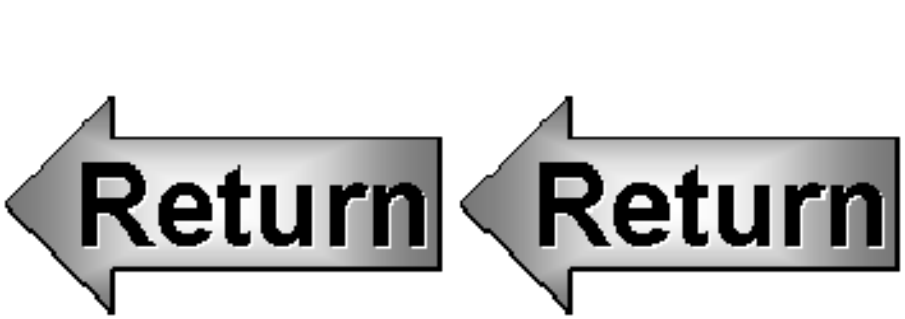
Players

TRANSCOM DLA Services Industry

Deliverable

Time Definite Delivery

SCOR MODEL



- **Processes associated with returning or receiving returned products**
- **Return excess inventory, disposal and salvage**
- **Includes items requiring maintenance, repair, and overhaul**

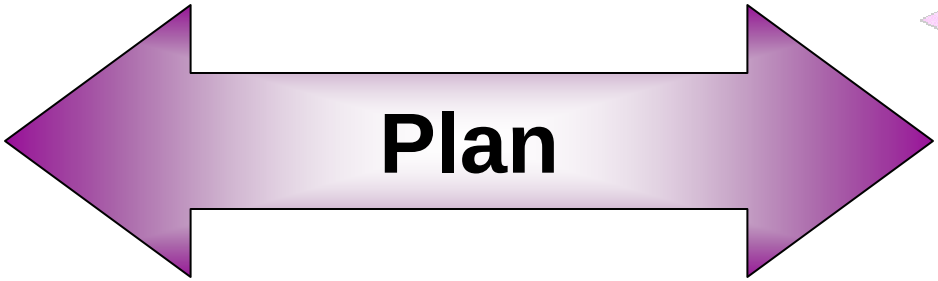
THE PLAYERS & DELIVERABLES

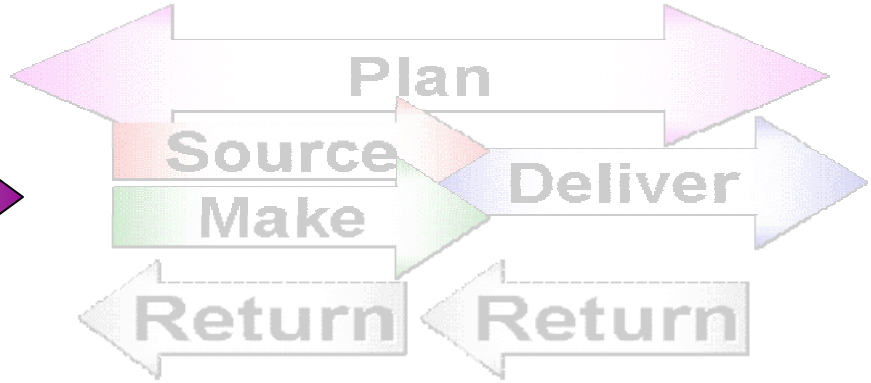
Players

Services TRANSCOM DLA Industry

Time Definite Delivery

SCOR MODEL

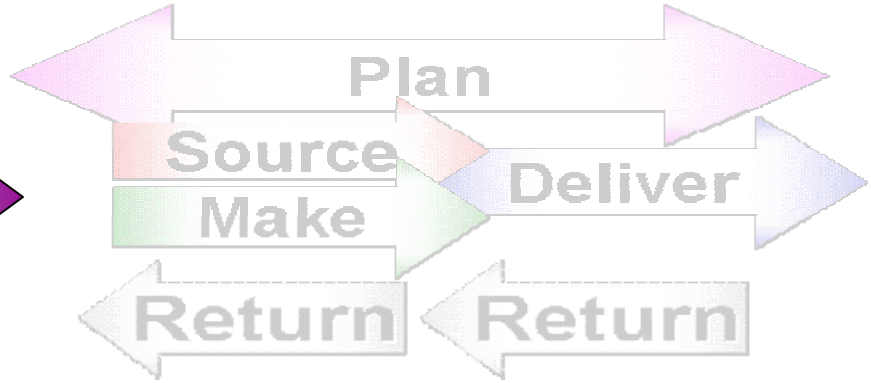




- **Process that balances supply and demand to best meet sourcing, make, and delivery requirements**
- **Management of business rules, data collection, regulatory requirements, and compliance**
- **Manage supply chain performance**

THE PLAYERS & DELIVERABLES

Plan



Players

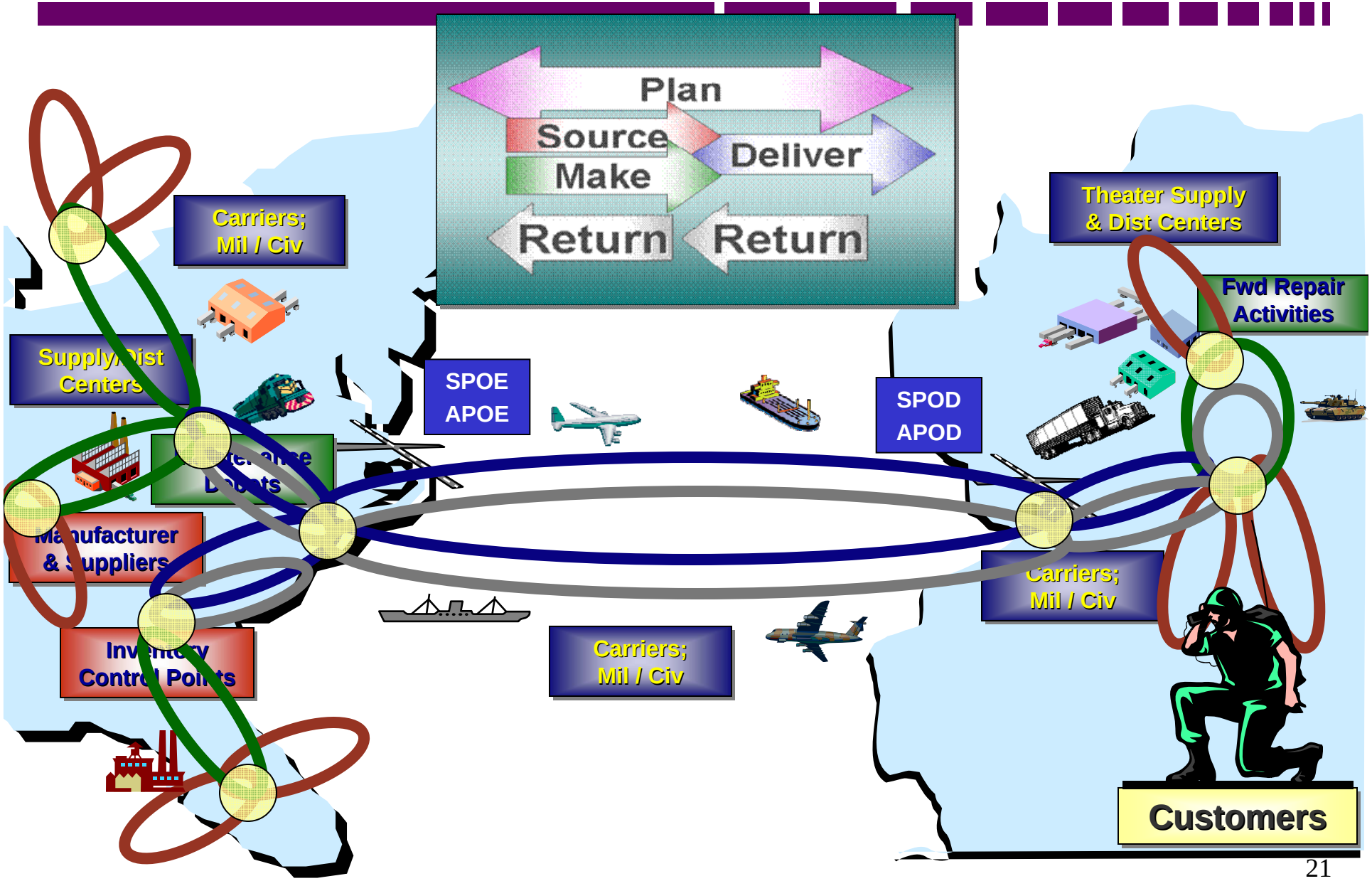
ALL

Deliverable

An adaptive supply chain able to meet emerging needs

DOD SUPPLY CHAIN

DOD SUPPLY CHAIN



HOW DO WE MEASURE SUCCESS?

Objective: *Rapid & Precise Response!*

- **Speed**:

  "Get me what I need, where I need it, when I need it . . . quickly!!"

- **Reliability**:

  "Consistency and predictability . . . Time definite delivery!"

- **Visibility**:

  Immediate order confirmation and EDD . . . "Where is my stuff, and when will I receive it?"

- **Efficiency**:

  Eliminate non-value steps; same output for less cost; fewer people needed to deliver same output.

- **Performance tracking**:

  "How is our supply chain doing?"

- **Process diagnosis**:

  "Where are the choke points?"

OUR CHALLENGE

"Optimizing the supply chain"

- ✓ **Deliver unity of effort across the supply chain**
  - Use the SCOR model to define
  - Ensure we have the right authorities & capabilities
  - Develop shared awareness & common processes
  - Use the same metric of success
- ✓ **Deliver enterprise- wide visibility**
  - Connectivity – 24 x 365
  - Data architecture – enterprise view
  - Global focus – anything less will sub-optimize output
- ✓ **Measure success at same point in the supply chain**
  - *The supply chain must be optimized to deliver the best outcome* **for the customer**

STRATEGIC QUESTIONS

- **How do we clearly define the roles of our global providers?**
- **What are the responsibilities of a "Process Owner?"**
- **Should the Defense Department have a single "owner/executive" responsible for each SCOR process?**
- **Who should be held accountable for the performance of the supply chain?**
- **Can we agree on a common, high-level performance metric?**

FINAL THOUGHT

Optimizing the supply chain is critical to provide and sustain logistics readiness . . . .

Delivering *freedom of action* for the Joint Force Commander.

We must achieve unity of effort without unity of command

QUESTIONS?

Changing to meet the Challenges

A View From My Foxhole

LTG Ann Dunwoody
Deputy Chief of Staff, G-4

Unclassified

Changing to Meet the Challenges

- **Developed Log Concept of Support – leverages our joint and strategic partners**
- **Created Modular Organizations - supports full spectrum joint operations**
- **Enhanced Theater Opening and Force Reception Capability – supports JRSOI**
- **Designed Single Army Log C2 – provides joint capable options to COCOM**
- **Changed the Way We Generate Forces – supports JFCOM via ARFORGEN**
- **Standardized Capabilities in AC/RC – delivers trained and ready capabilities to COCOM Commander**
- **Centralized Strategic Reachback – integrates industry and strategic partners in national sustainment base and reduces log footprint**

Campaign Quality Logistics

Much Done …

Unclassified

Today's Battle Space

Conducting Simultaneous Support

Campaign Quality ⟷ **Joint Interdependency**

Non linear, asymmetrical, noncontiguous … 2-way, end-to-end

Opportunities…

- Joint TAV / ITV Architecture
- Joint Theater Engagement Strategy
  - Retrograde/Resetting the Force
  - Joint Log Training
  - Joint Stockage
  - LOGCAP
- Joint Stationing and Restationing
  - Base Realignment and Closure (BRAC)
  - Inter-global positioning and basing strategy (IGPBS)
  - Power projection and support platforms
- Joint Doctrine
- Joint Log Domain Governance

Joint Deployment, Employment, and Sustainment

Much To Do …

Multi-National Logistics Transformation

Air Vice Marshall Kevin Leeson

Air Commodore Margaret Staib

Colonel Mike Boomer

Jay Erb – Panel Moderator

LOCKHEED MARTIN

We never forget who we're working for™

Sustainment Science & Technology Panel

National Defense Industrial Association
22nd Annual
National Logistics Conference
April 18, 2006

Joe Grosson

Panel Members

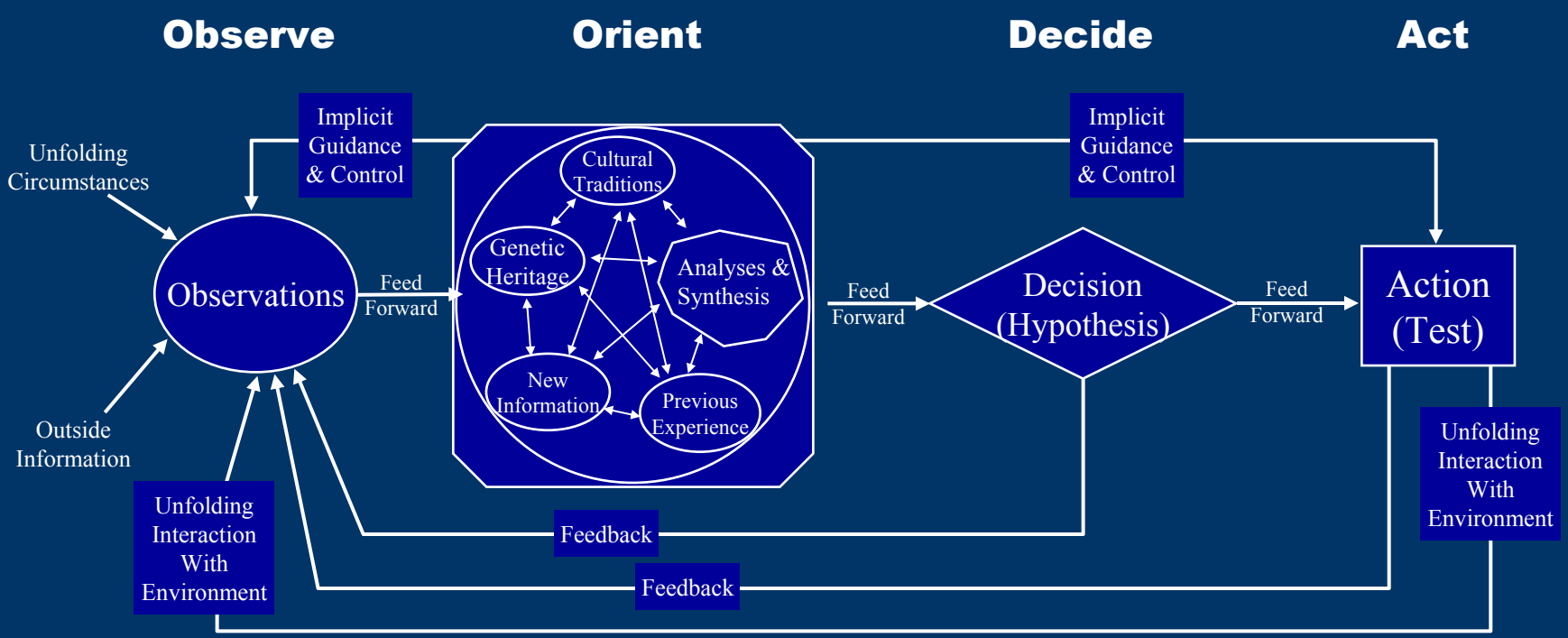
Panel Co-chairs:

- **RADM Lenn Vincent, USN (Ret.) Defense Acquisition University, Industry Chair**
- **Joe Grosson, Managing Director, Enterprise Logistics Technology Office, Lockheed Martin**

Speakers:

- **Dr. Anil Varma, GE Global Research Center**
- **Dr. Robert M. Cranwell, Sandia National Laboratories**
- **MGEN Dennis Jackson, USA (Ret.) Oak Ridge National Laboratory**

Boyd's OODA "Loop"



Note how orientation shapes observation, shapes decision, shapes action, and in turn is shaped by the feedback and other phenomena coming into our sensing or observing window.

Also note how the entire "loop" (not just orientation) is an ongoing many-sided implicit cross-referencing process of projection, empathy, correlation, and rejection.

From "The Essence of Winning and Losing," John R. Boyd, January 1996.

Defense and the National Interest, http://www.d-n-i.net, 2001

Boyd's OODA "Loop" Simplified

- Observe:
  - Scan the environment and gather data from it
- Orientation:
  - synthesize the data into information & knowledge
- Decide:
  - Evaluate options and select course of action
- Act:
  - Execute and re-cycle through the loop

Result:

Act quickly and continuously to out think and out maneuver the adversary

How can we apply this to logistics?

- Technology is continuously increasing the flow of data, organizing it into information and knowledge and therefore allowing actionable decisions to be made faster and faster
- We must continuously move around the OODA loop in an endless cycle, constantly reorienting faster than our adversaries

Providing the right capability at the right time with optimal sustainment of the warfighter
Faster and better then the adversary all the time

Notional Logistics OODA Loop

Observe	Orient	Decide	Act
•C&C •Intelligence •Surveillance •Readiness Assessment •Port & Connector Service Status •Integrated Planning	•Situational Awareness •I & D Level Depots •Pre-positioned Stock •Visualization Environment •TAV & ITV •Distribution & Transportation Infrastructure	•C2 Logistics Com. & Control w/autonomous reaction •Deploy sustainment infrastructure •Preposition •Initiate flow of Capability •Energize the global supply chain & Reverse Logistics •Ensure TAV & control of connectors	•Execute & Manage the Supply Chain of materiel, support & personnel with autonomous action •infrastructure with TAV/ITV & rapid command decisions •Trigger based stimuli for SCM •Distance access to maintenance & sustainment knowledge

Visibility, Communication, Dynamic Adjustment

Knowledge Processing & Decision Management

Task Execution

Focused Logistics Command & Control ~ Functional Flow

Sense

Respond

Joint Warfighter In-theater

Operational Commander Knowledge Input
- Mission Profile
- Supply Requirements
- Anticipated movement
- Demand history
- Supplies on-hand
- Retro-grade status
- Support personnel reqmts
- Real-time usage data

Enablers
- Embedded weapons sys. sensors
- Position location
- Transponders
- Logistics Sensor Grid
- Communication
- Data base
- In-situ asset visibility
- Asset tagging
- INFOSEC

Intermediate Staging
- In-theater
- Off-shore (Near))
- Off-shore (Far)

Tactical C4ISR

Output Warfighter Support

Info Input

Logistics Command & Control

C2LOG Command Center
- Validate Requirements
- Determine Access route to asset
- Inventory status
- Arrange Transportation
- Track Inventory
  - In-transit visibility
  - Intermediate storage
  - Depot inventory
- Financial Tracking & Mgmt

- Routing of Asset to Warfighter
- Routing of Retrograde

- In-situ Maintenance & Repair
- Contractor Support in Theater

- Supply Effectiveness Measurement & Improvement

Enablers
- IT Infrastructure
- Data mining
- Communications
- TAV (RFID,…)

Supply Execution

Simulation, Modeling, Neural Programming, Demand Forecasting

SCM

Supply Chain Management Command Center
- Electronic Requisition Processing and Ordering
- Connectivity with depots, warehouses OEMs, Vendors, DLA, …
- Demand status & prediction
- Asset Visibility
- Prioritizing
- SCM Over-rides
- Optimization of shipping routes

3PLs & 4PLs

Performance Based Logistics

PSIs, DLA, Depots, Arsenals, ICPs
- Repair, Return or Replacement
- Maintenance (O,I,D)
- Upgrade or modernize

- Failure Monitoring & Assessment

Visibility, Communication, Dynamic Adjustment

Knowledge Processing & Decision Management

Task Execution

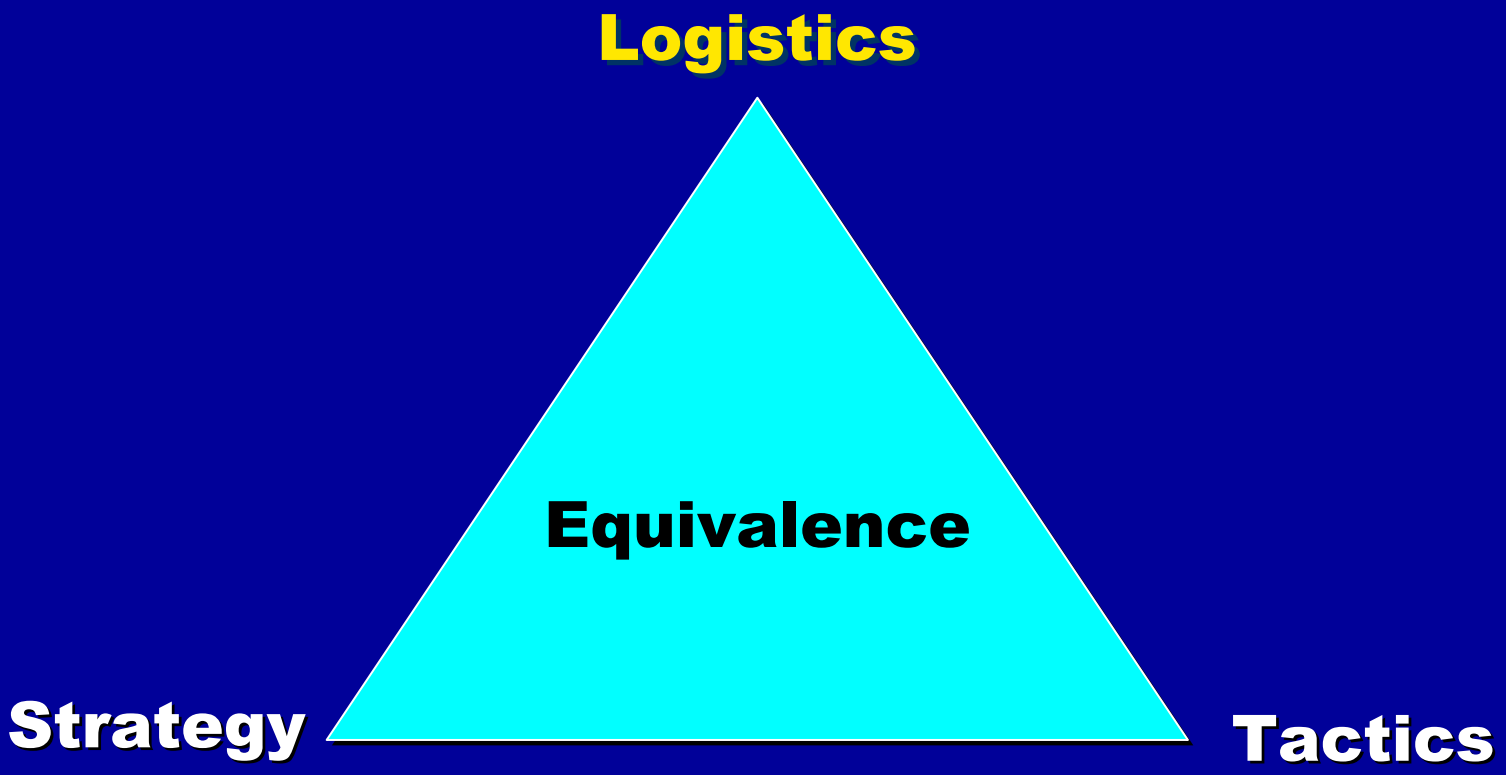
Logistics Technology Enablers

- **Diagnostics, Prognostics and health management**
  - Embedded sensors & algorithms
  - Performance & Failure Prediction
  - Anomaly Detection
- **Modeling, simulation, forecasting, trending**
  - Adaptive Logistic Models, Interoperability, Integration of Heterogeneous Processes
- **Decision Support**
  - Data/Information fusion, Classification, Ontology, Strategic Decision Support, Mission Planning, Intelligent Agents, Optimization
- **Common operating picture visualization environments; situational awareness**
  - Geospatial, Audio/Visual Integration, Common Intelligence Picture, Knowledge Representation, Supervisory Decision Making
- **Information Assurance & Communications**
  - Wearable Devices, Smart Cards, Biometrics, WI-FI, PKI, VOIP, Speech Recognition, bandwidth usage reduction

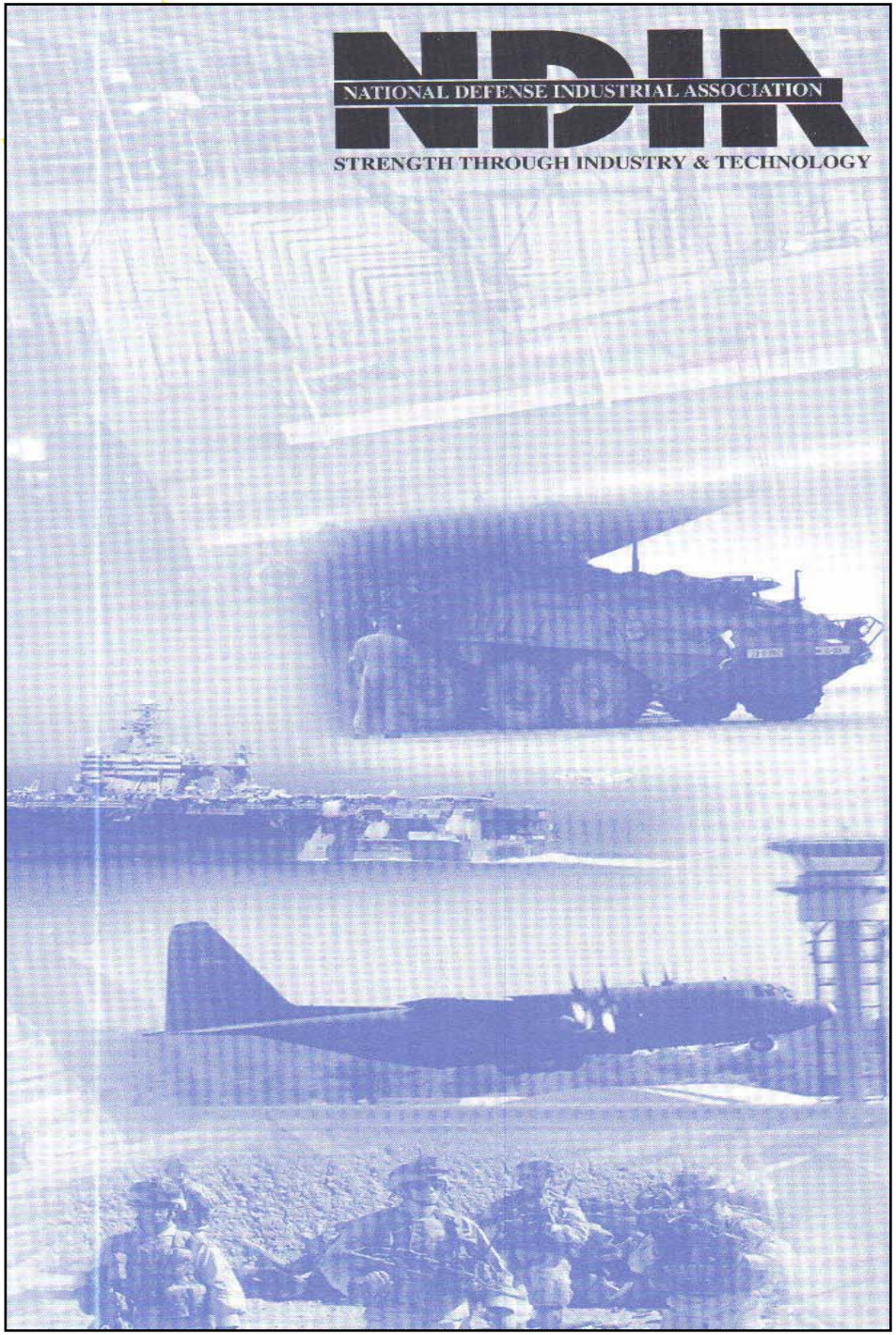
Logistics Technology Enablers

- **Automated Identification Technology beyond RFID**
  - Electrical signature analysis, system processes, data base management, and integration for TAV & ITV
- **Logistics Enterprise Architectures**
  - Enterprise Services, Web Services, Public Sector Vertical Applications, Open Source Technologies, Information Extraction, Business Process Monitoring & Automation, ERP; Data Portals and portal services
- **Knowledge systems & coalition force knowledge sharing**
  - Adaptive Logistic Models, Information Extraction, Semantic Web, XBRL, XML/SOAP Engines
- **Automated Decision Tools**
  - Data/Information fusion, Collaboration, Classification, Ontology, Strategic Decision Support, Mission Planning, Intelligent Agents, Optimization, Forecasting
- **Other: design for maintenance free operation, embedded AIT, Warehouse Automation, in-theater support, e.g. MULE**

The Equivalence Principle demands the balanced application of logistics technology to persevere and prevail



"Logistics… the bridge between the national economy and the combat forces." (from Eccles, *Logistics in the National Defense*).



Logistics Responses for the New Strategic Environment

NDIA 22nd Annual
National Logistics Conference
Miami, FL

April 17-20, 2006

Logistics Responses for the New Strategic Environment Panel

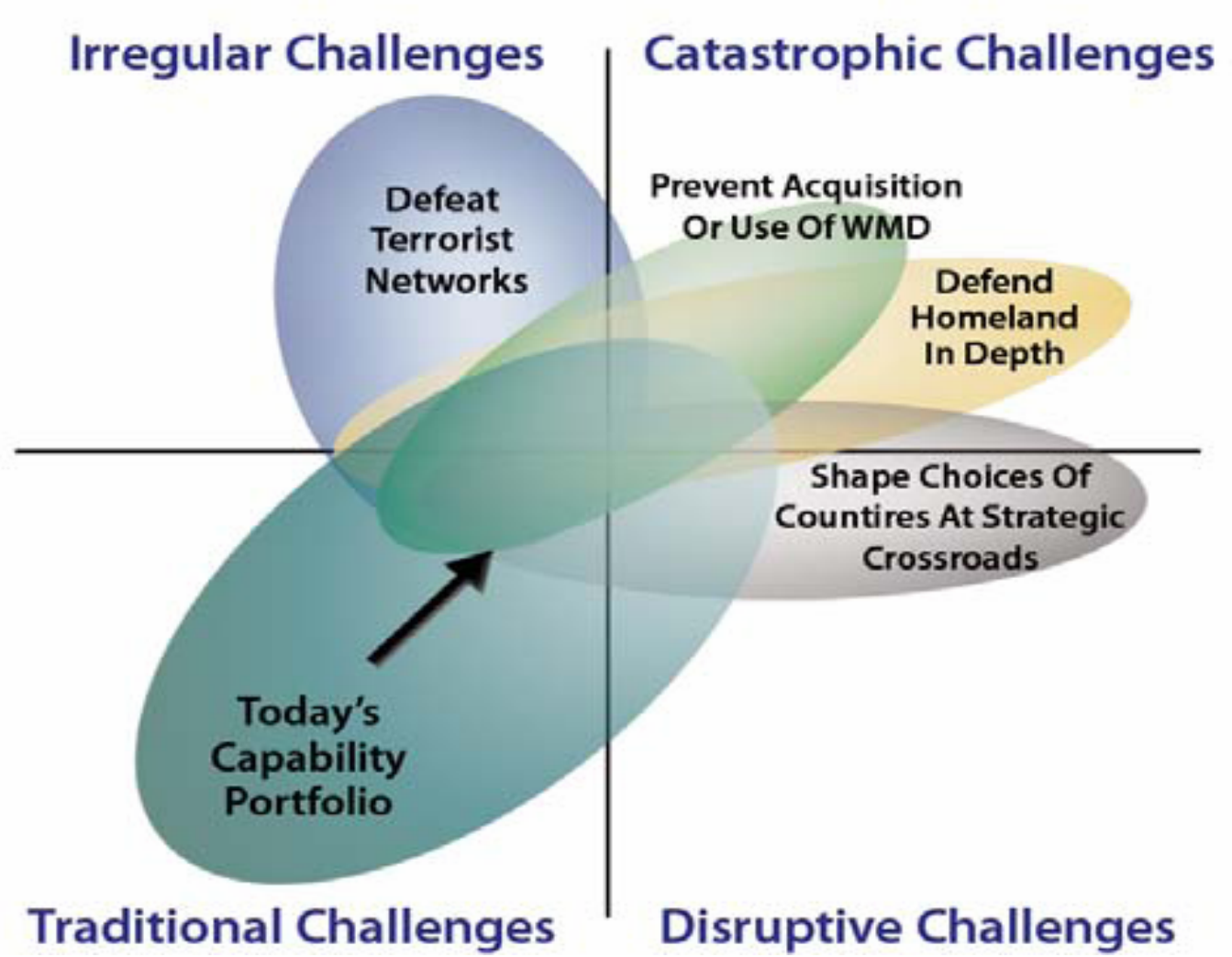
Mr. Jim Hall
Acting Assistant Deputy
Under Secretary of Defense for
Logistics Plans and Programs

MG Loren Reno, USAF
Vice Director
Defense Logistics Agency

Mr. Ed Dolanski
Raytheon
Chief Information Officer
Raytheon Network Centric System

BG (P) Bob Radin, USA
Deputy Chief of Staff for Logistics
and Operations
United States Army Materiel
Command

QDR Perspective

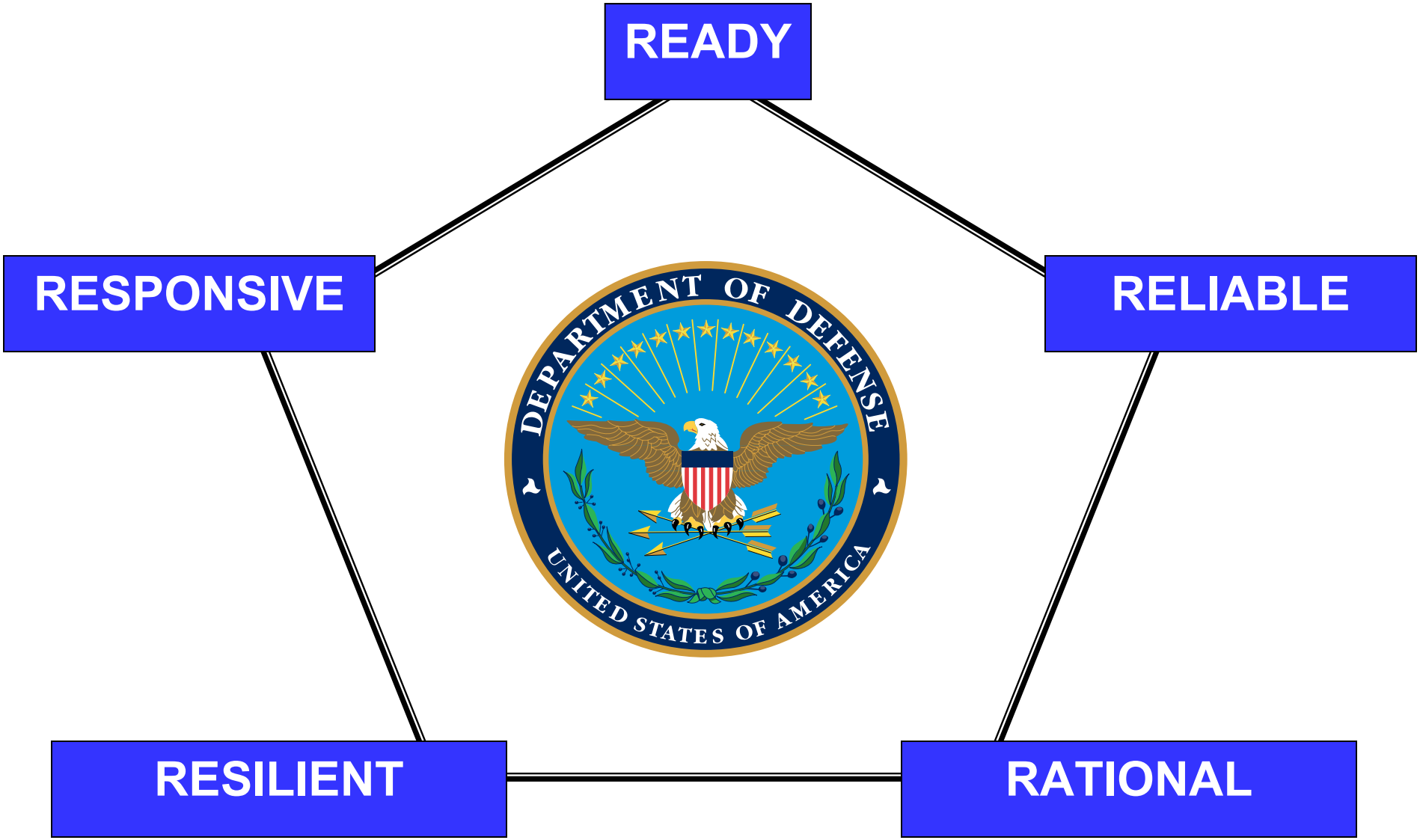


Changing Strategic Environment

FROM		TO
Reasonable Predictability	→	Surprise and Uncertainty
Threat-Based Planning	→	Capabilities-Based Planning
Coordinated Approaches	→	Integrated Approaches with Integrated, Interdependent Forces

Expanding Options for Commanders

Expectations of Logistics



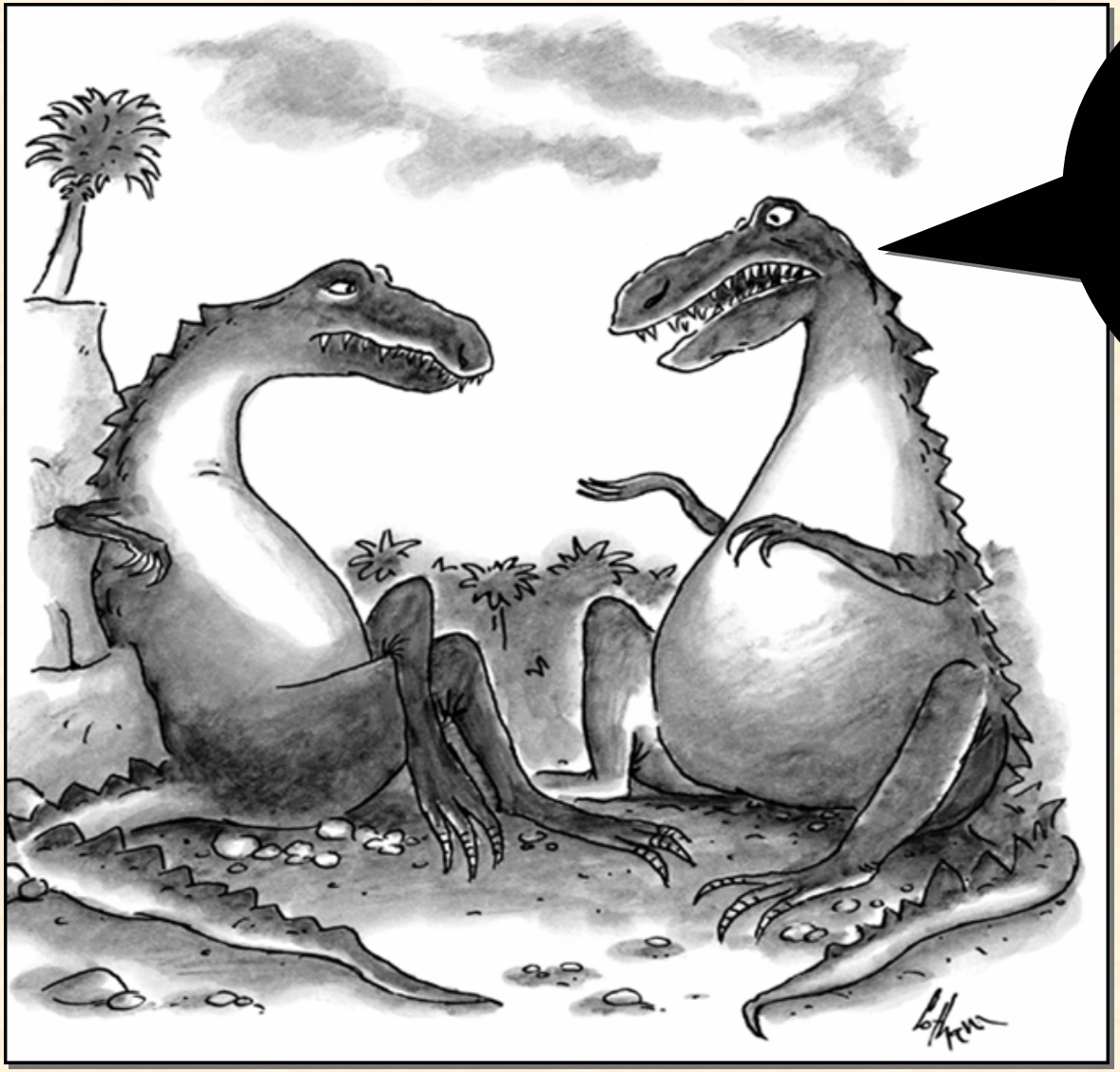
UT-BATTELLE

Oak Ridge National Laboratory
Technology to meet the Threat

Presented to:
NDIA's 22d National Logistic Conference

Dennis K. Jackson
Director, Logistics Innovation

Miami, Florida
April 18, 2006


"All I'm saying is, **now** is the time to develop the technology to deflect an asteroid."

The Manhattan Project—Oak Ridge's first grand challenge!

The Clinton Pile was the world's first continuously operated nuclear reactor

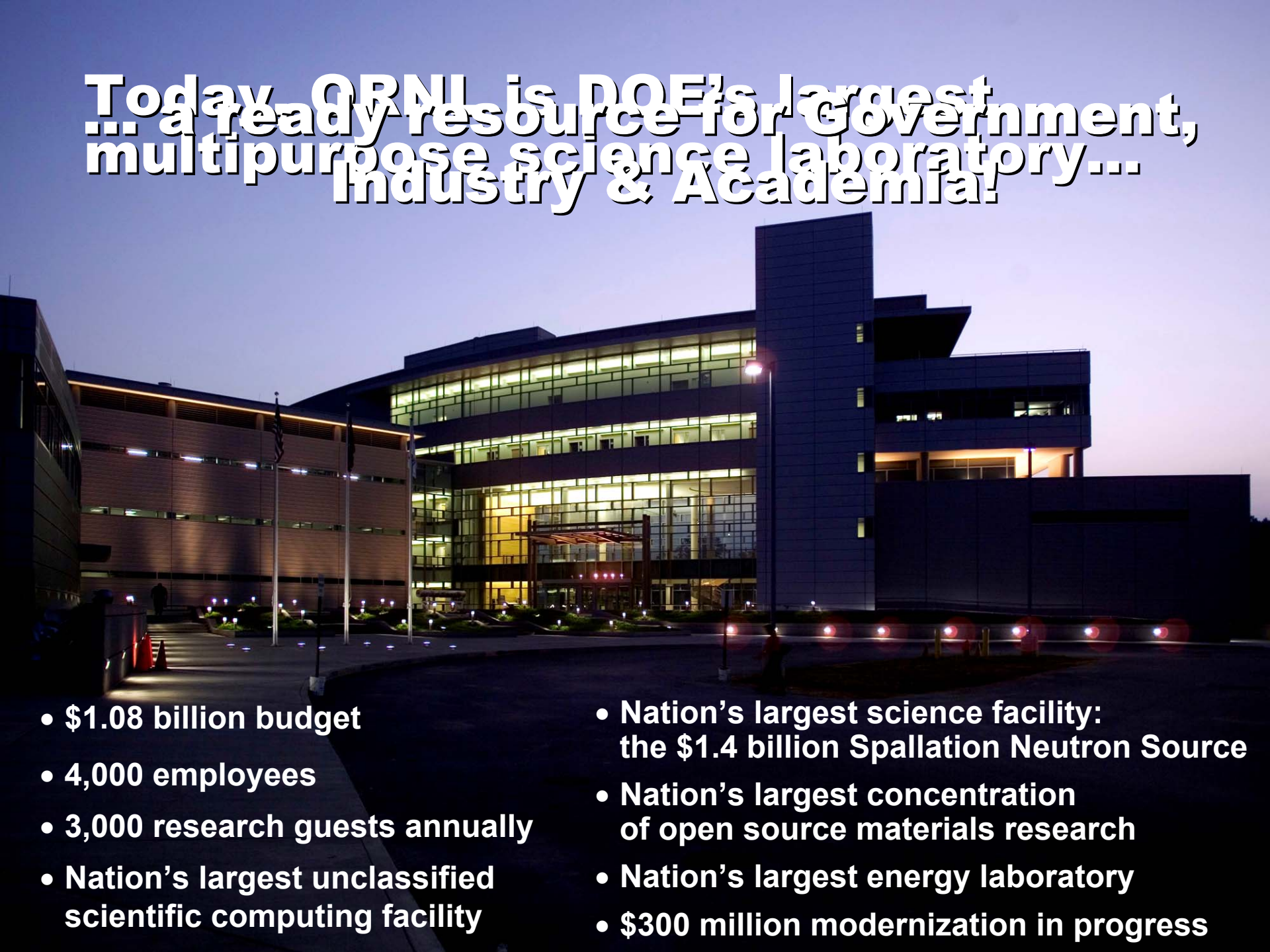
Senator Kenneth D. McKellar

“Most people skate to where the puck is . . . I skate to where the puck is going to be.”

– Wayne Gretzky

Today, ORNL is DOE's largest multipurpose science laboratory…

…a ready resource for Government, Industry & Academia!



- $1.08 billion budget
- 4,000 employees
- 3,000 research guests annually
- Nation's largest unclassified scientific computing facility
- Nation's largest science facility: the $1.4 billion Spallation Neutron Source
- Nation's largest concentration of open source materials research
- Nation's largest energy laboratory
- $300 million modernization in progress

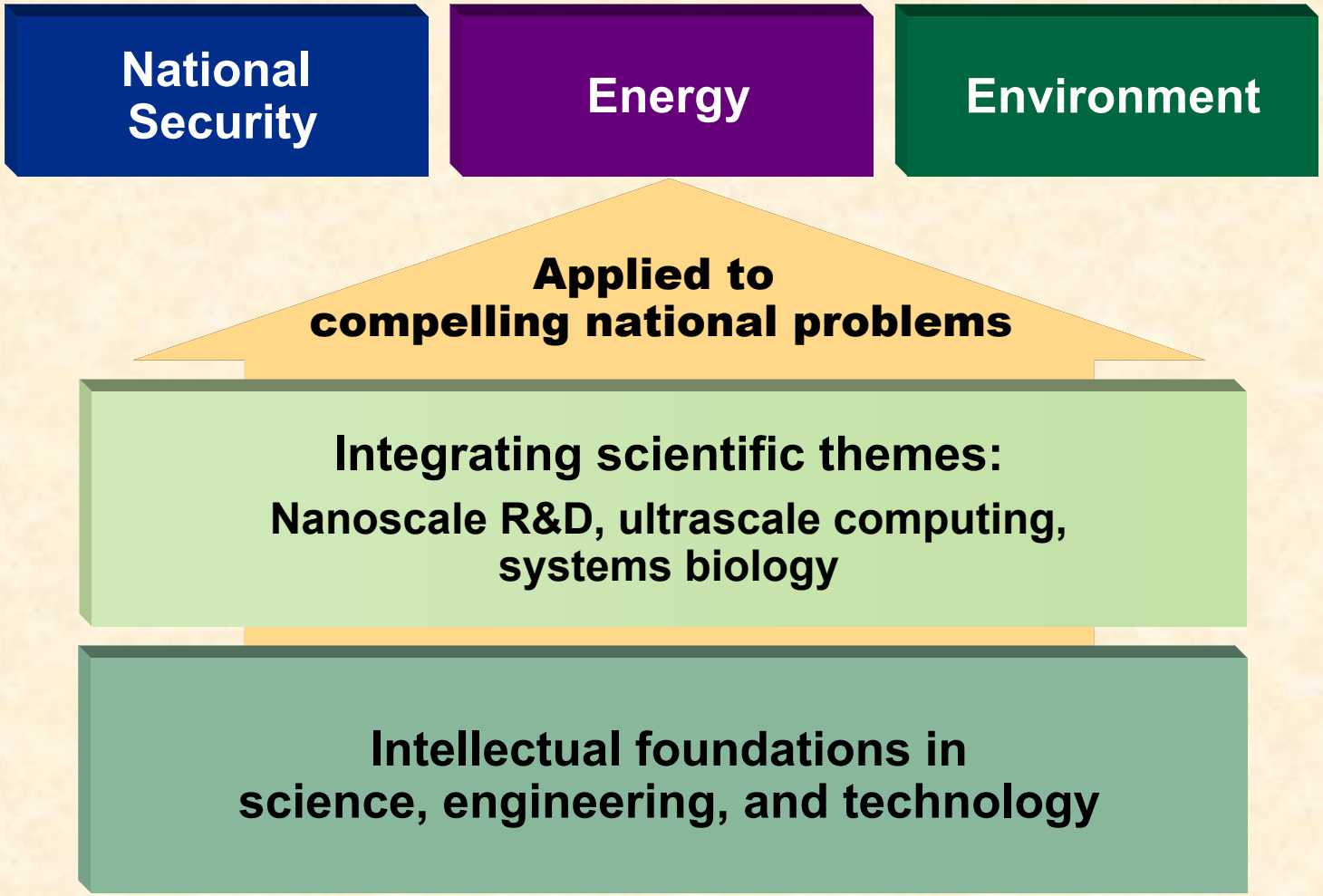
ORNL is managed and operated by UT-Battelle

UT-BATTELLE
Limited Liability Company

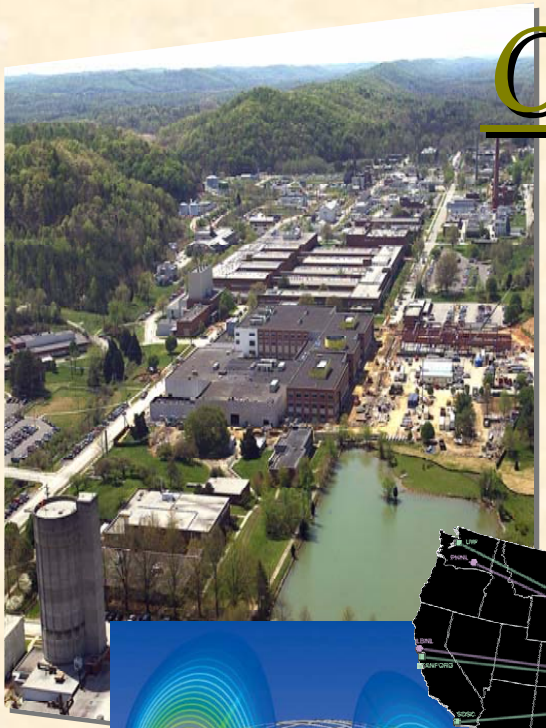
The University of Tennessee
Knoxville, Tennessee

Battelle
Columbus, Ohio

Our research framework focuses our resources on national needs

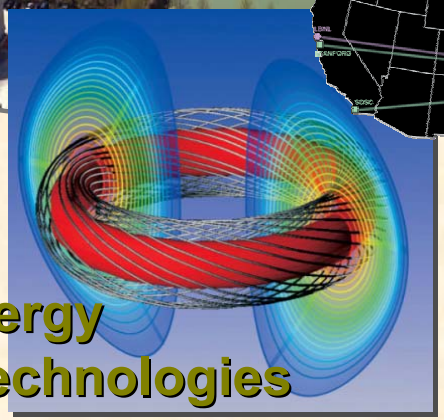


ORNL…World Class in:



- Neutron Scattering

- Life Sciences



- High-performance Computing

- Energy Technologies

- Materials Science

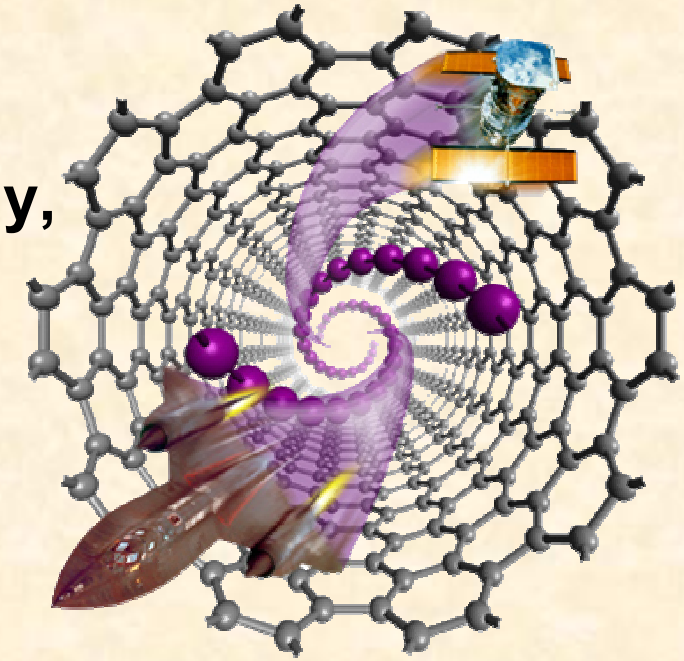
- National Security

UT-BATTELLE

Our Aspiration:

Best lab in the world at what we do…

- Control of functionality at the nanoscale
- Leadership-class computing for the frontiers of science
- Integration of biology and ecology, based on the foundation of understanding molecular-level interactions
- Integration of science, technology, and thought leadership for energy
- Innovative solutions that improve national, homeland, and global security

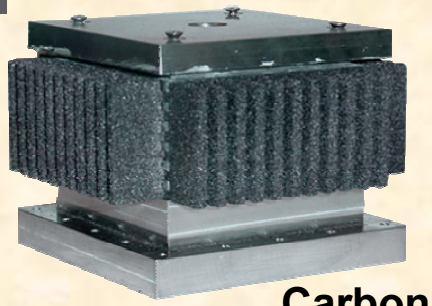


“ Those who say it cannot be done should not interrupt the person doing it.”

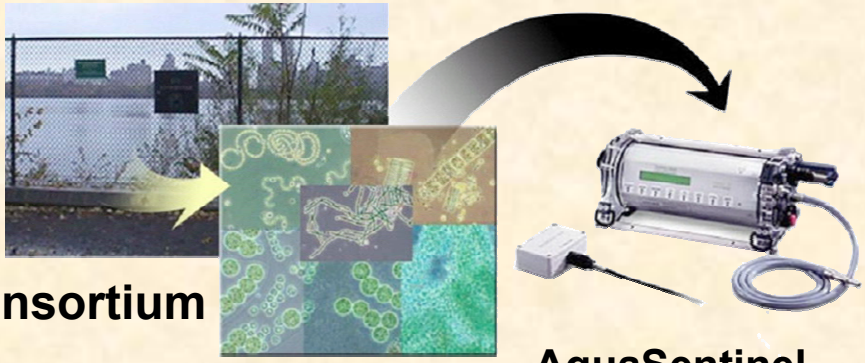
– Chinese Proverb

Partnerships are essential to our success!

- Other national laboratories
- Universities
  - UT-Battelle/ORNL core universities
  - UT-ORNL Center for Homeland Security and Counterproliferation
- Other government agencies
- Education/Training With Industry Program (U.S. Air Force and U.S. Army)
- ORAU post-docs
- Industry
  - National Security Technology Consortium
  - United Defense
  - National Safe Skies Alliance
  - NucSafe



Carbon foam

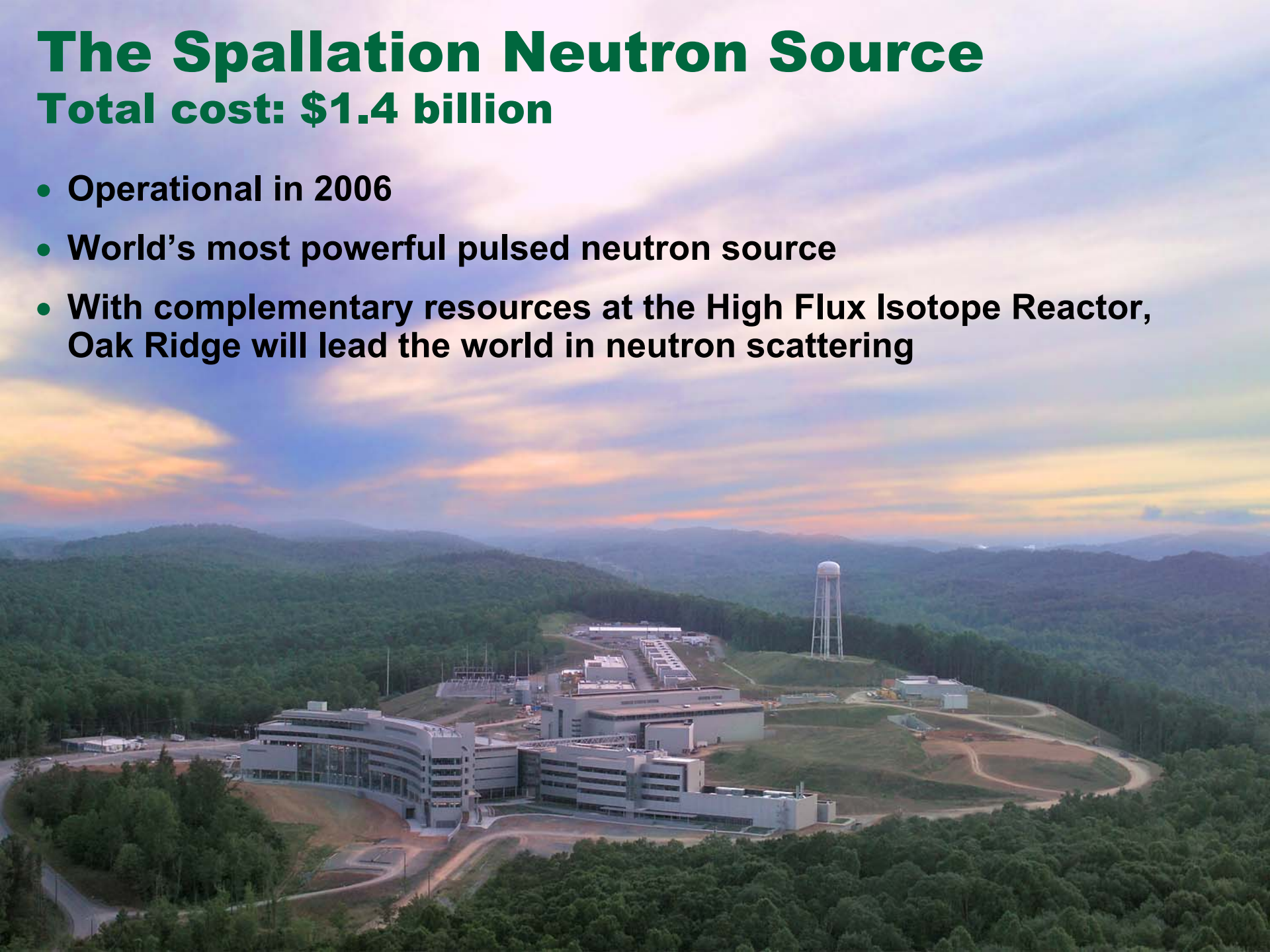


AquaSentinel

The Spallation Neutron Source

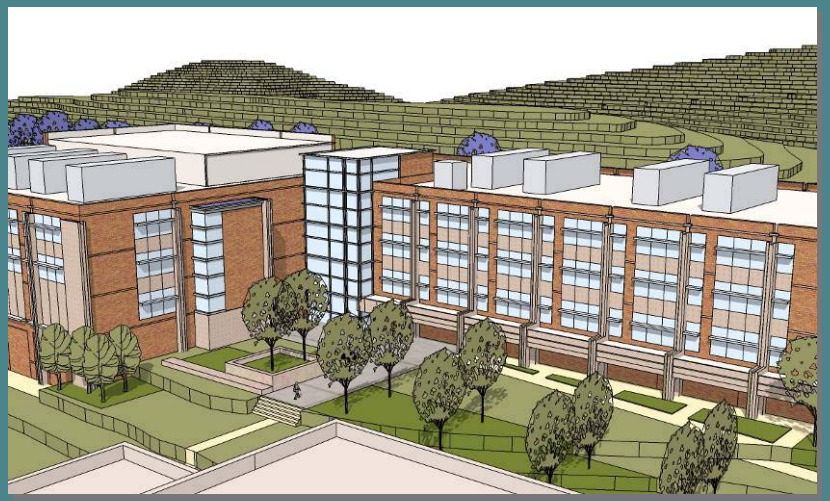
Total cost: $1.4 billion

- Operational in 2006
- World's most powerful pulsed neutron source
- With complementary resources at the High Flux Isotope Reactor, Oak Ridge will lead the world in neutron scattering



ORNL's East Campus

Multiprogram Research Facility



- 200,000 ft^2
- Light labs, computing space, and offices
- Capable of handling the full range of national and homeland security work

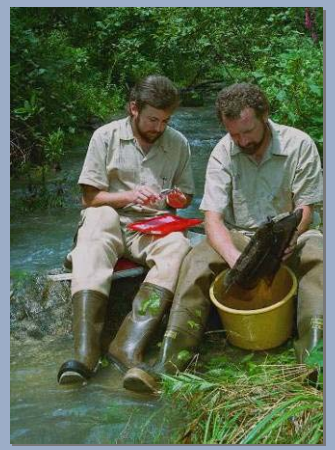
We operate user facilities that serve an international research community

Buildings Technology Center

High Flux Isotope Reactor

High Temperature Materials Laboratory

Metals Processing Laboratory User Center



National Environmental Research Park

Providing access to unique and expensive tools and facilities for cutting-edge research

We committed to become a key resource for national security

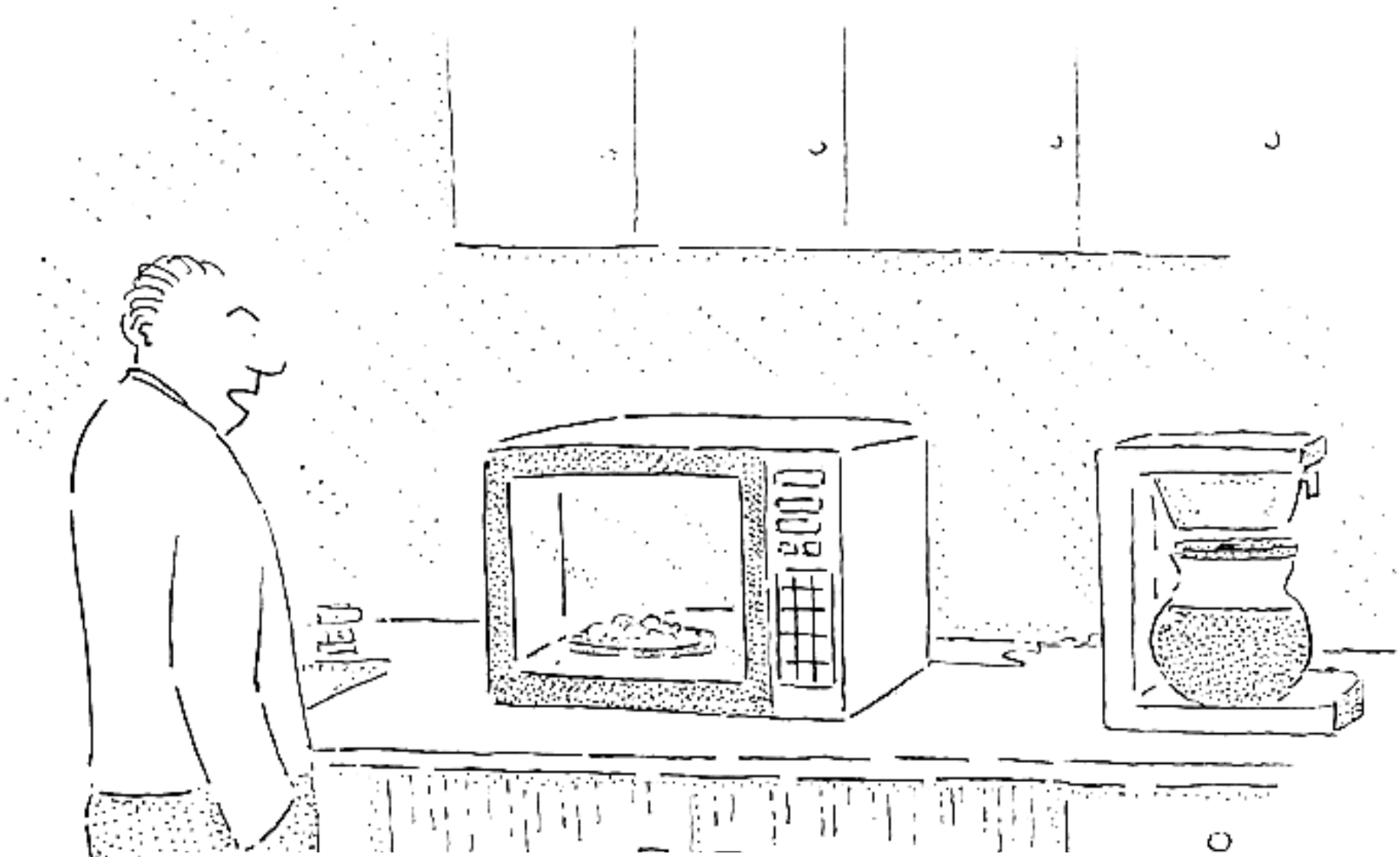
Nuclear Security	Department of Defense	Homeland Security

Today

- **Leading key NNSA initiatives**
- **$150M program**

- **Broad connections to the defense and intelligence communities**
- **Multiprogram Research Facility**

- **Expanding state and regional partnerships**
  - **SensorNet**
  - **Safe Cities**



"No, I don't want to play chess. I just want to reheat the lasagna."

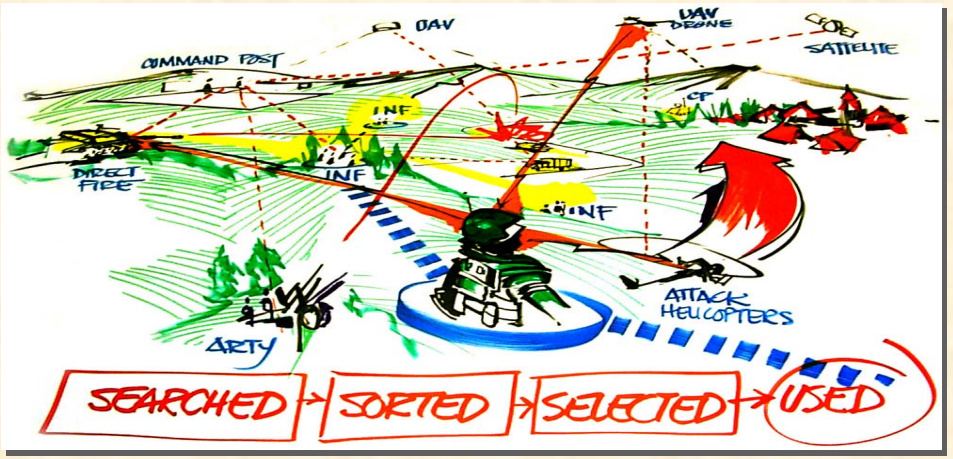
MANKOFF

We are applying our S&T resources to national and homeland security

- Deploying integrated systems for incident awareness, detection, and response
- Creating tools for information management, synthesis and analysis
- Expanding modeling and simulation for threat analysis and response planning
- Delivering enhanced protection and new capabilities to warfighters
- Applying advanced materials to security applications
- Detecting, preventing, and reversing the proliferation of weapons of mass destruction

Potential DOD Applications

- Intelligent agents
- Comprehensive assessment methodology
- Special materials
- CBRNE detection
- 6D gyroscopic sensor navigation
- Mobile ad hoc networking
- Advanced sensor/wireless
- Advanced propellants
- Water purification
- Ballistic protection
- Power



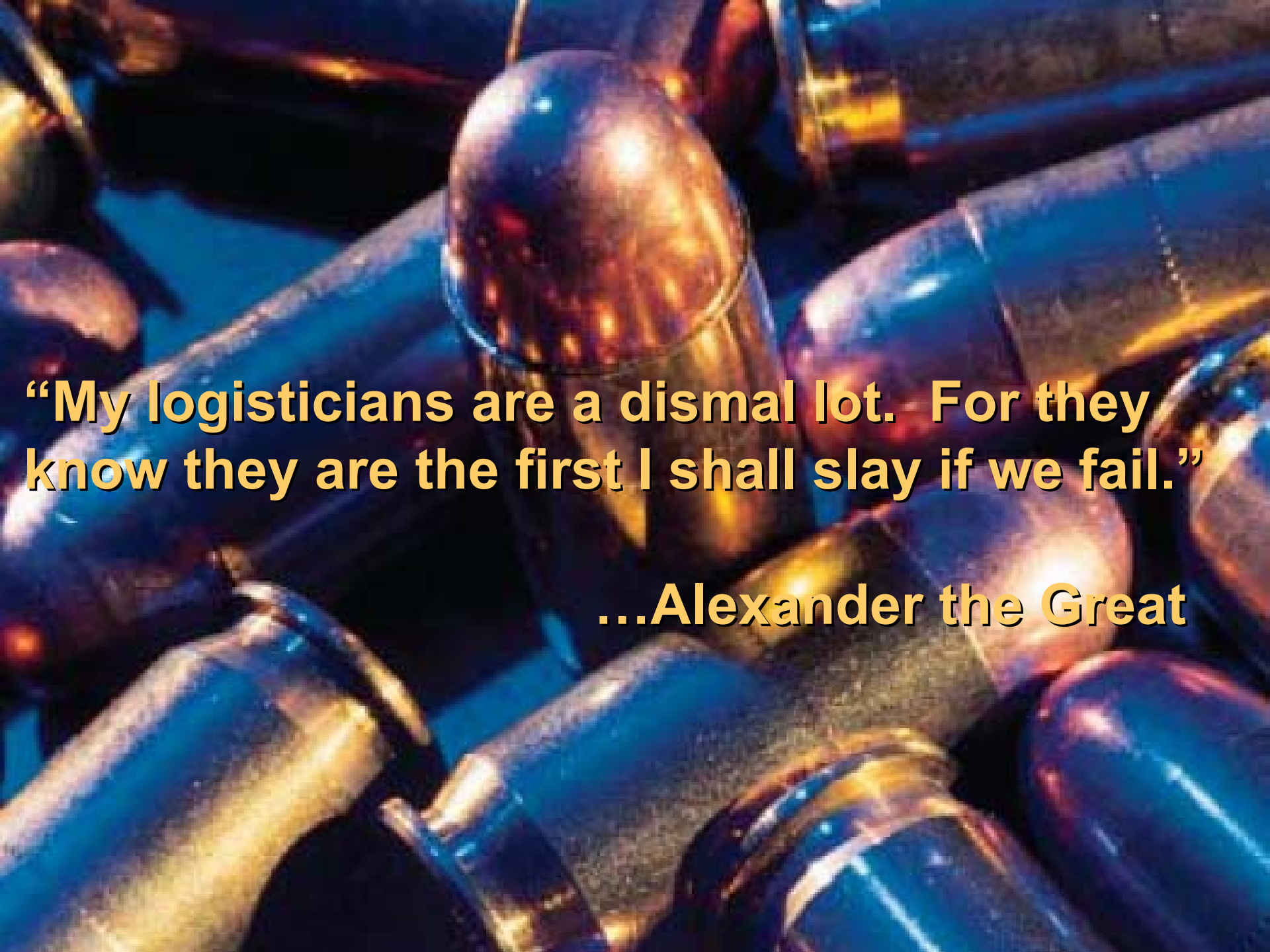
- Gun barrel technology
- CFAST
- Micro-climate conditioning
- Smart minefields
- Medical diagnosis
- Signature management
- Visioning – what will technology allow

Oak Ridge Visioning

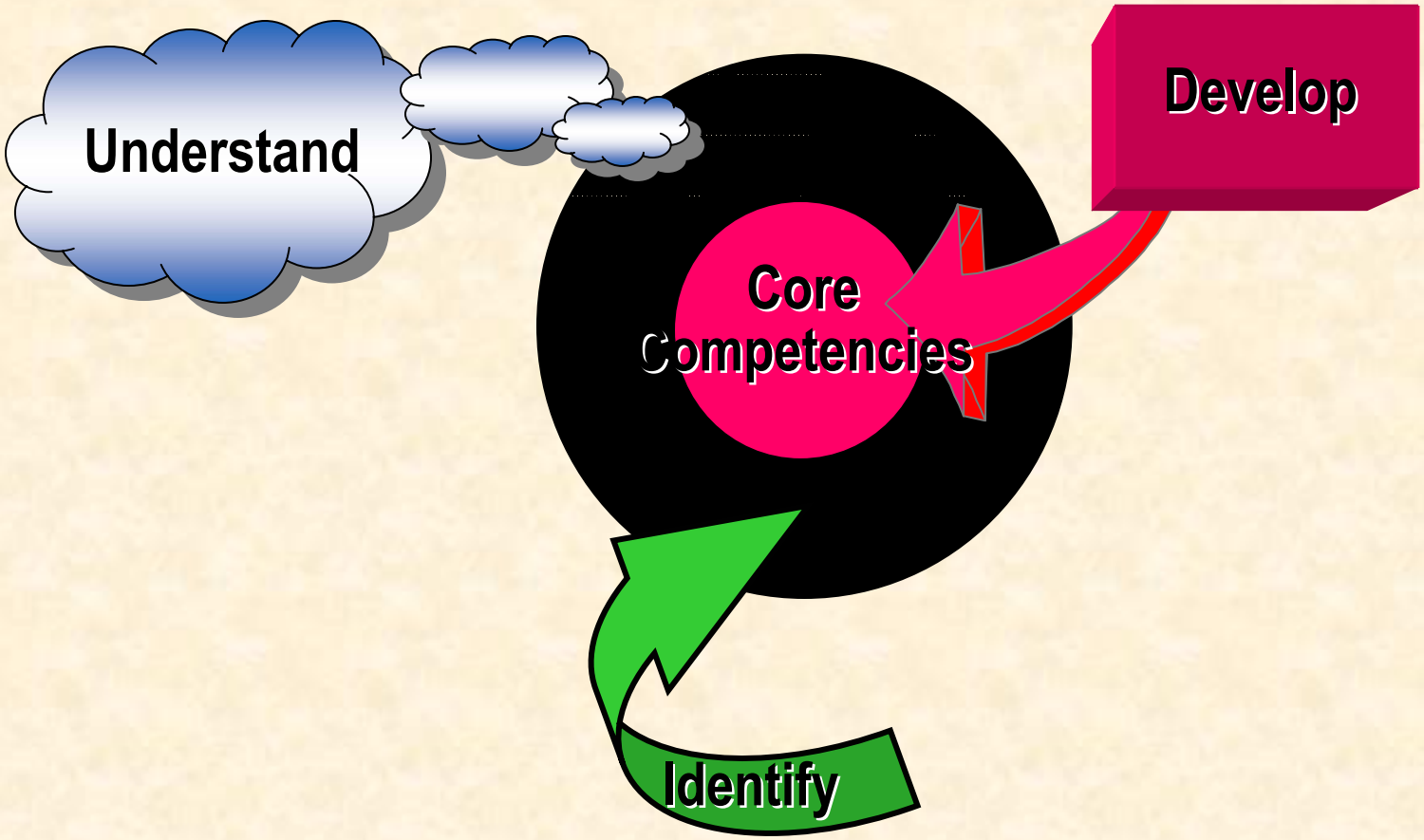
- Develop concepts and architectures that are technologically feasible.

- Bring the “best-in-class” technologies and operational experience to the table.

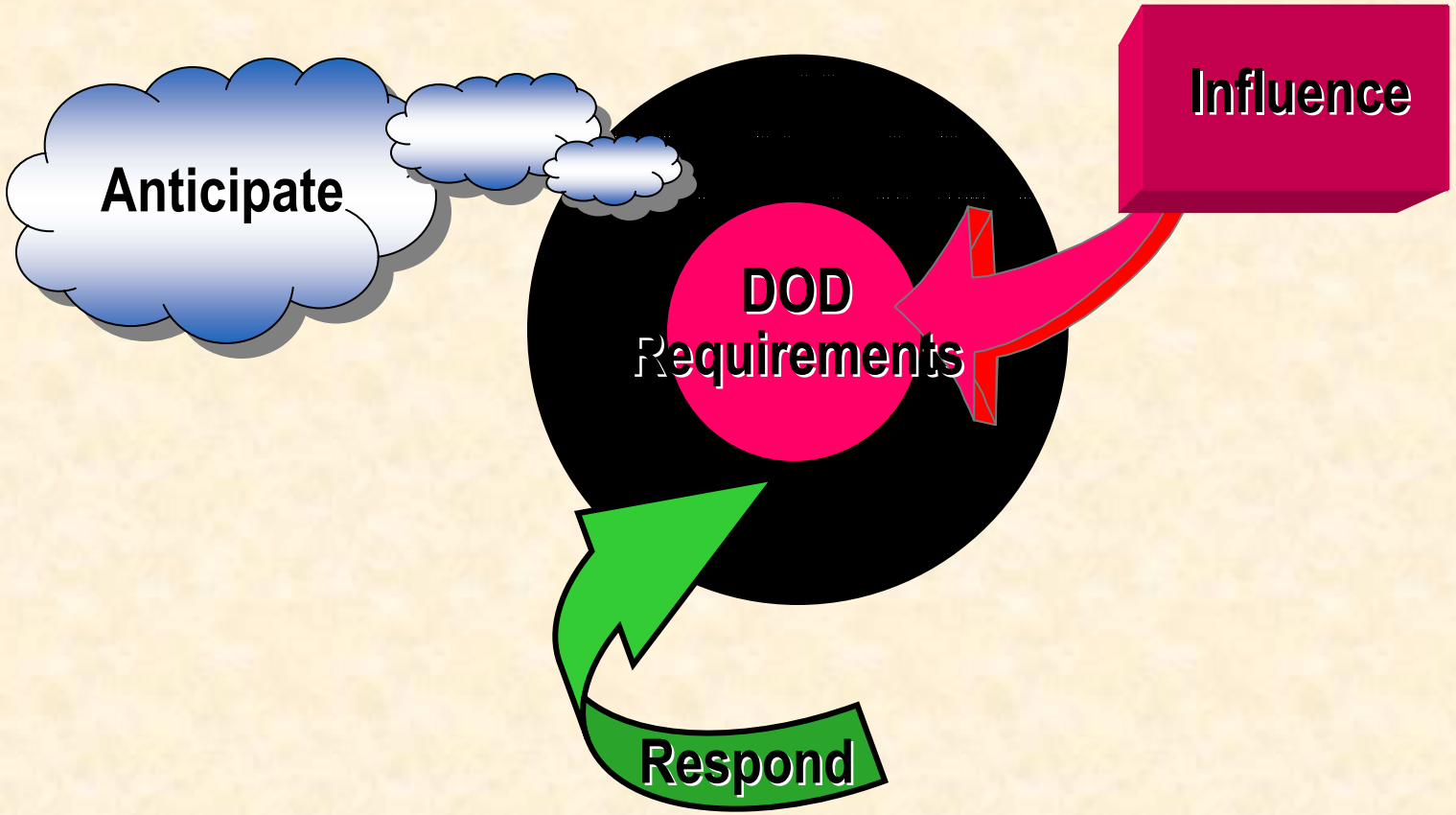
- Determine what technology will allow for the future.


“My logisticians are a dismal lot. For they know they are the first I shall slay if we fail.”
…Alexander the Great

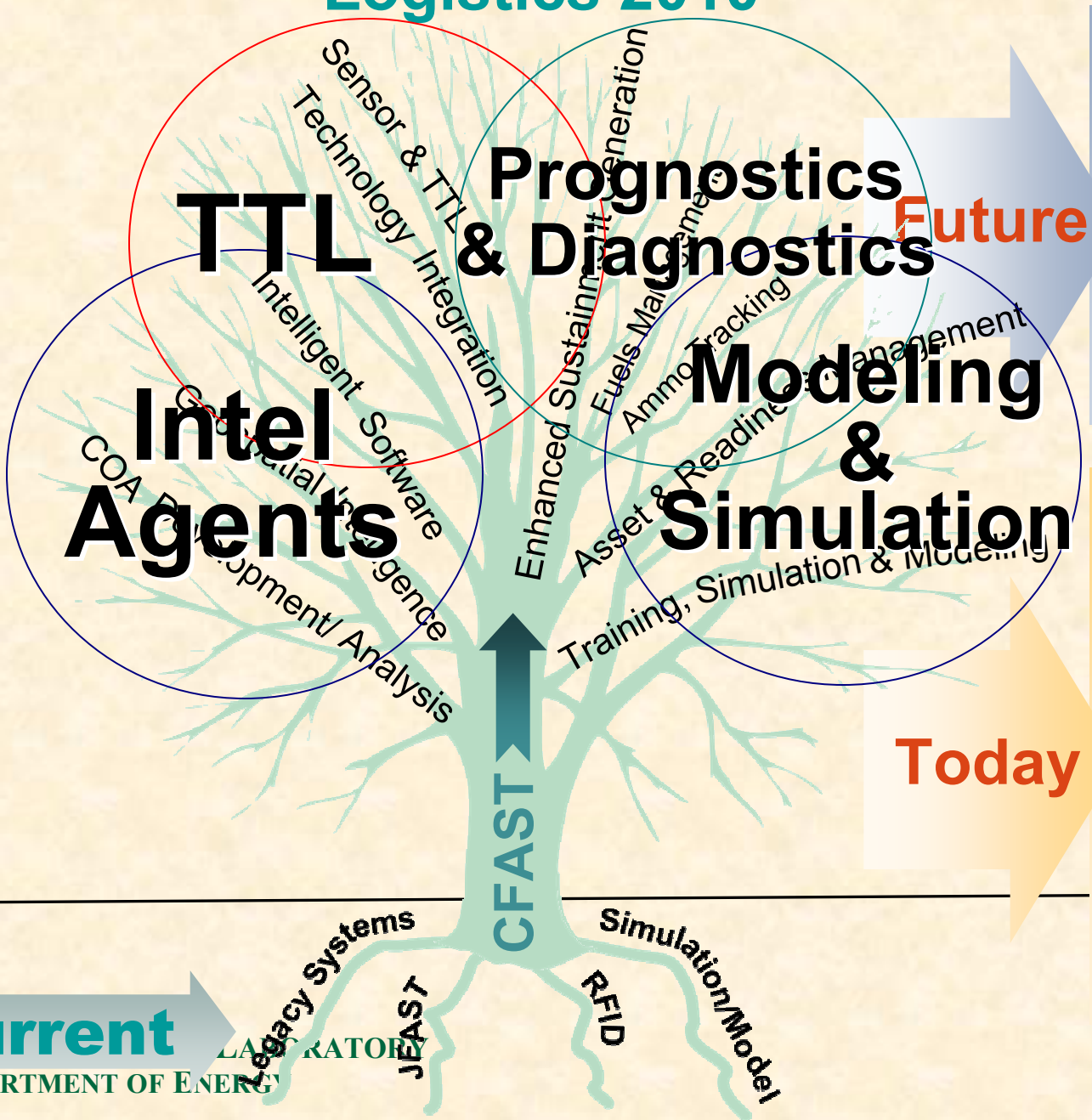
Logistics "Transformation"



Logistics "Transformation"



Logistics 2010



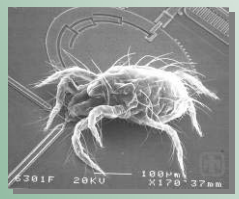
- Total Asset Visibility
- Total Readiness Visibility
- Supply Chain Mgmt
- AP Enabler

- Rapid TPFDD
- Collaborative PC-based
- Delib/Crisis Planning & Execution
- Integrated Resupply
- Unit/Eqp/Log
- End-to-end process

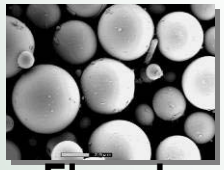
Simulating the inaccessible, ...discovering the unknown!

Ant

Human hair

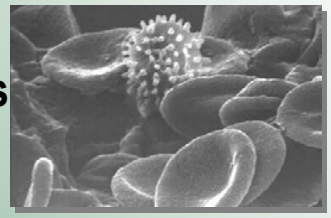


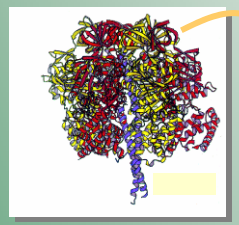
Dust mite

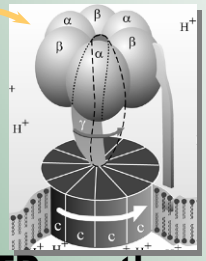


Fly ash

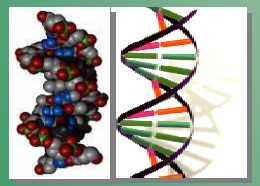
Red blood cells





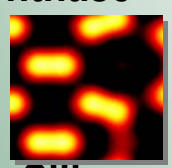


ATP synthase



DNA

Hydrogen atom



Silicon atoms

10^{-2} m — 1 cm

10^{-3} m — 10^6 nanometers

10^{-4} m — 0.1 mm, 100 μm

10^{-5} m — 0.01 mm, 10 μm

Microworld

10^{-6} m — 10^3 nanometers

Visible spectrum

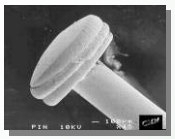
10^{-7} m — 0.1 μm, 100 nm

10^{-8} m — 0.01 μm, 10 nm

Nanoworld

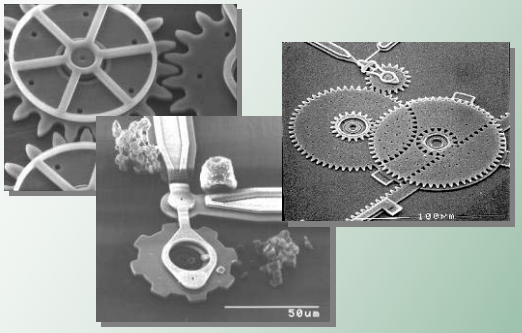
10^{-9} m — 1 nanometer (nm)

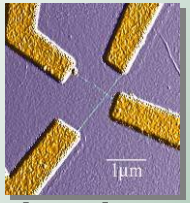
10^{-10} m — 0.1 nm, 1 angstrom



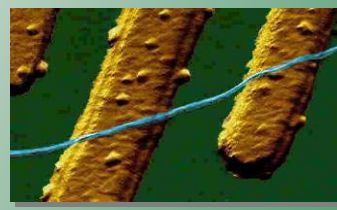
Pin head

Microelectromechanical devices

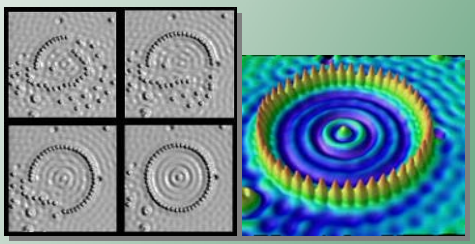




Nanotube electrode



Nanotube transistor

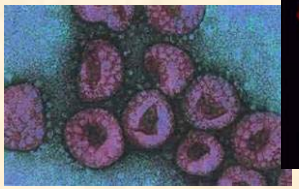


Quantum corral of 48 iron atoms (14 nm diam)

Persistent and Emerging Challenges

Irregular Challenges
State and non-state adversaries employing unconventional methods to counter *traditional* advantages

Catastrophic Challenges
Acquisition, possession, and use of WMD or methods producing WMD-like effects



More Likely

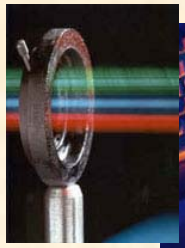
Lower Vulnerability

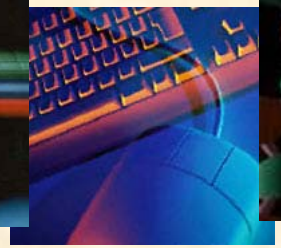
Higher Vulnerability

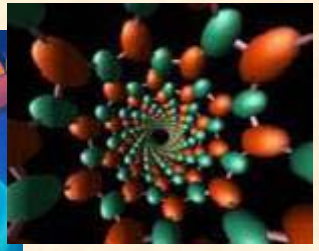
Less Likely

Traditional Challenges
States employing recognized capabilities and forces

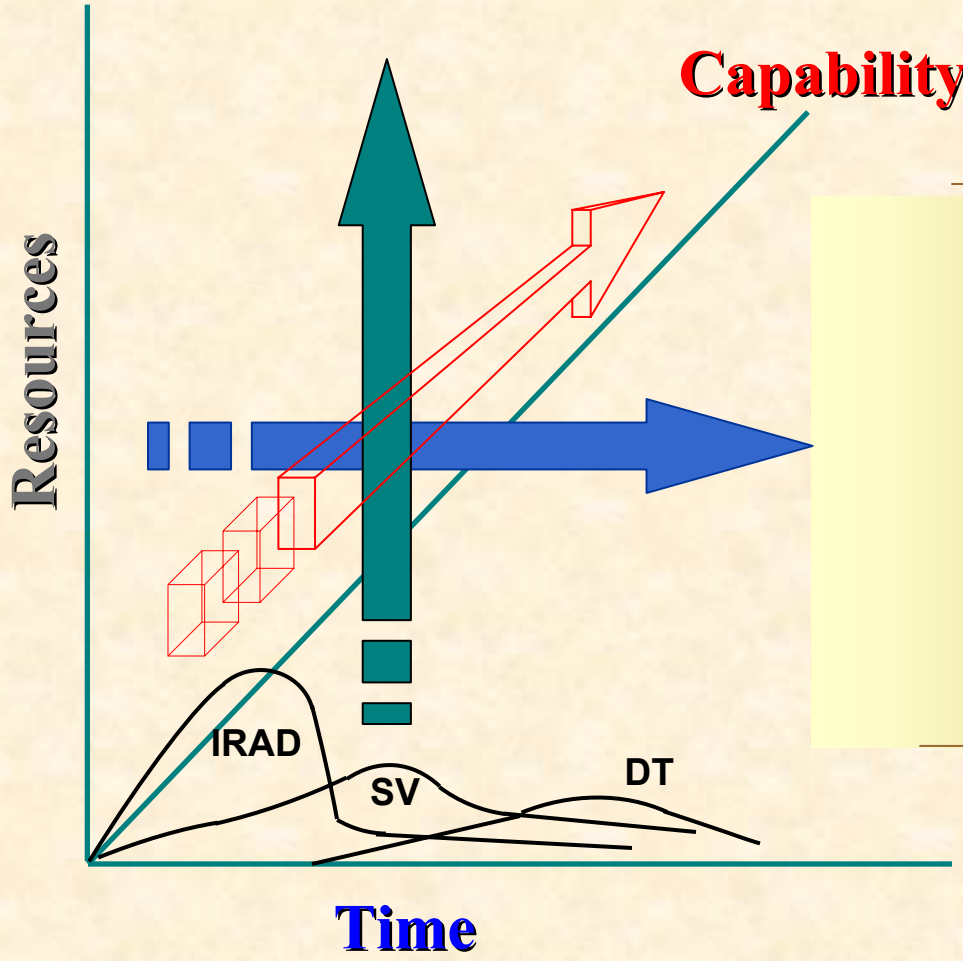
Disruptive Challenges
Development and use of breakthrough technologies to negate current U.S. advantages







Disruptive Technologies



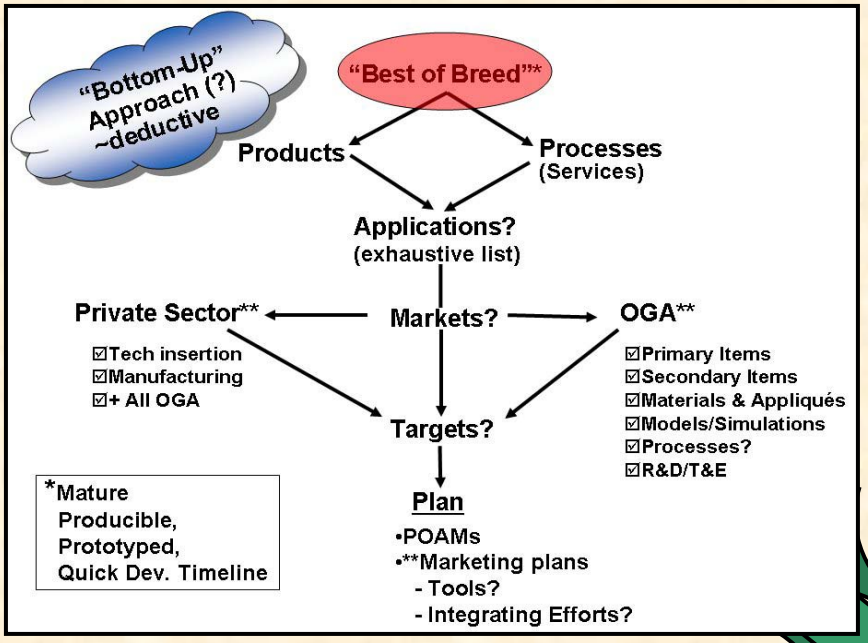
Applications?

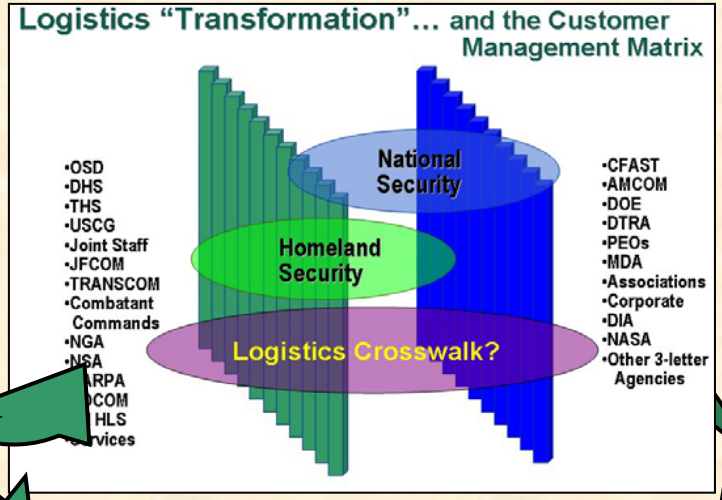
- Tagging, Tracking & Locating
  - Multi-capable Readers
  - Advanced Waveforms
- Supercomputing & Modeling
- Intelligent Agents
- Sensor Integration
- Advanced Materials
- Super-Hydrophobics
- Brazing & Welding techniques
- Advanced Water Filtration
- Deployment & Sustainment Enablers
- Fuel Cells

Denny Jackson
Logistics Transformation

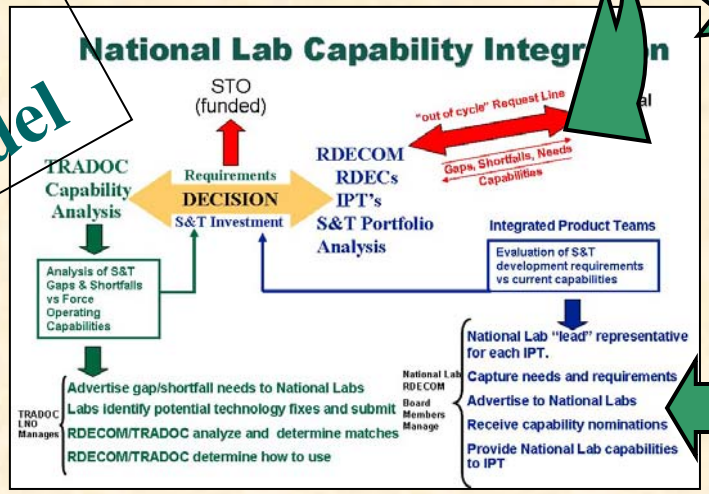
OAK RIDGE NATIONAL LABORATORY
U. S. DEPARTMENT OF ENERGY

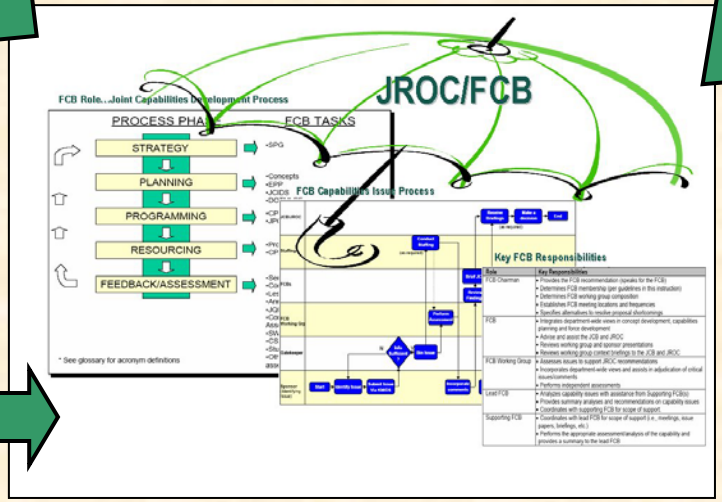
UT-BATTELLE

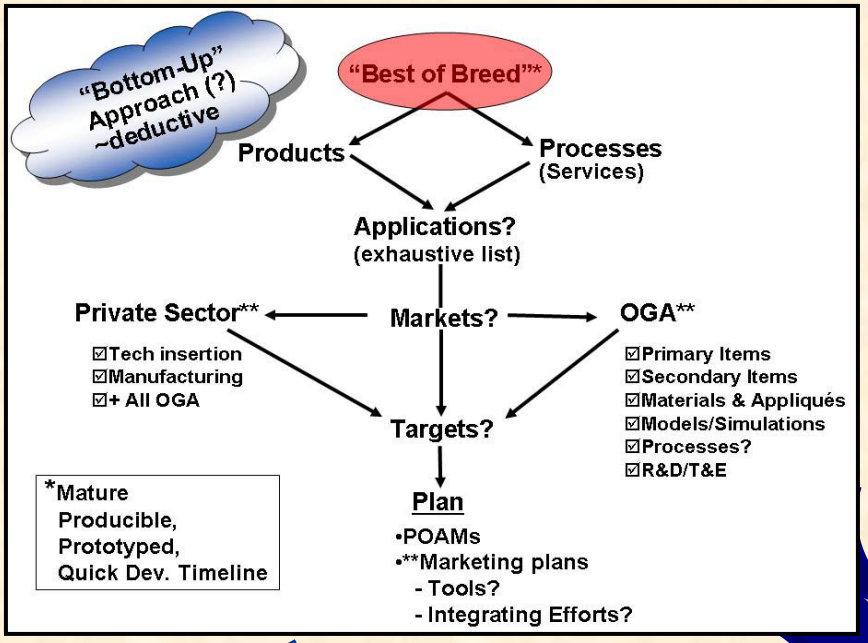

"Bottom-Up" Approach (?) ~deductive
"Best of Breed"*
Products
Processes (Services)
Applications? (exhaustive list)
Private Sector**
Markets?
OGA**
☑Tech insertion
☑Manufacturing
☑+ All OGA
☑Primary Items
☑Secondary Items
☑Materials & Appliqués
☑Models/Simulations
☑Processes?
☑R&D/T&E
Targets?
Plan
•POAMs
•**Marketing plans
- Tools?
- Integrating Efforts?
*Mature Producible, Prototyped, Quick Dev. Timeline


Logistics "Transformation"… and the Customer Management Matrix
•OSD
•DHS
•THS
•USCG
•Joint Staff
•JFCOM
•TRANSCOM
•Combatant Commands
•NGA
•NSA
•CFAST
•AMCOM
•DOE
•DTRA
•PEOs
•MDA
•Associations
•Corporate
•DIA
•NASA
•Other 3-letter Agencies
National Security
Homeland Security
Logistics Crosswalk?

Army Model


National Lab Capability Integration
STO (funded)
"out of cycle" Request Line
Gaps, Shortfalls, Needs Capabilities
TRADOC Capability Analysis
Requirements
DECISION
S&T Investment
RDECOM
RDECs
IPT's
S&T Portfolio Analysis
Integrated Product Teams
Evaluation of S&T development requirements vs current capabilities
Analysis of S&T Gaps & Shortfalls vs Force Operating Capabilities
National Lab "lead" representative for each IPT.
Capture needs and requirements
Advertise to National Labs
Receive capability nominations
Provide National Lab capabilities to IPT
Advertise gap/shortfall needs to National Labs
Labs identify potential technology fixes and submit
RDECOM/TRADOC analyze and determine matches
RDECOM/TRADOC determine how to use
TRADOC LNO Manages
National Lab RDECOM Board Members Manage


JROC/FCB
FCB Role...Joint Capabilities Development Process
PROCESS PHA
FCB TASKS
STRATEGY
PLANNING
PROGRAMMING
RESOURCING
FEEDBACK/ASSESSMENT
FCB Capabilities Issue Process
Key FCB Responsibilities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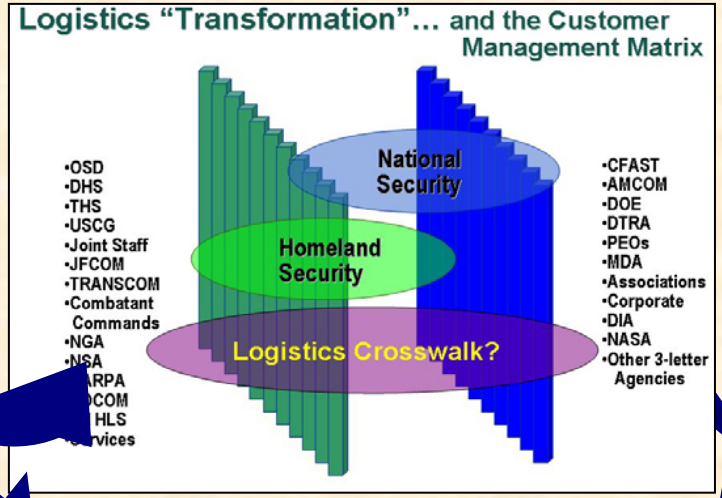
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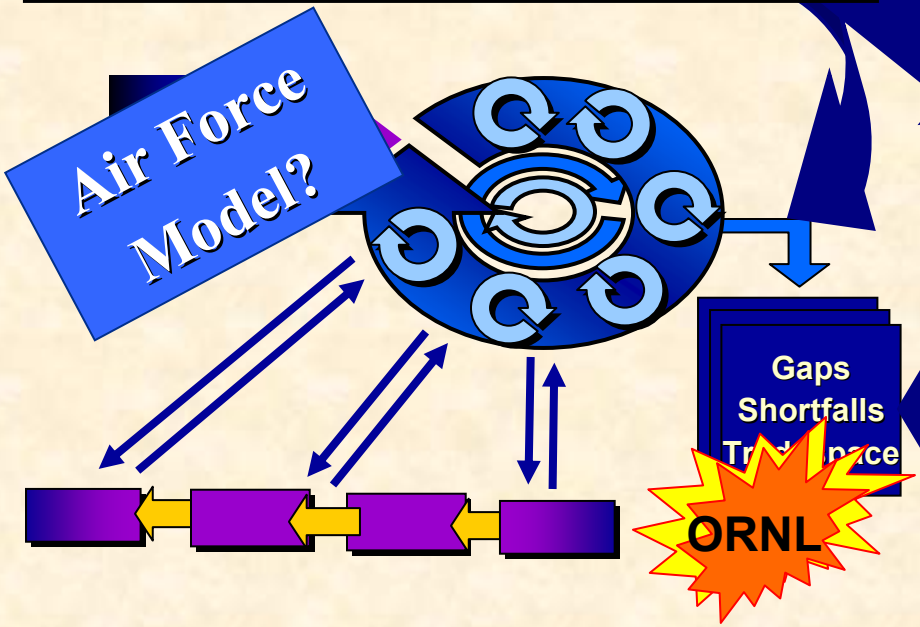
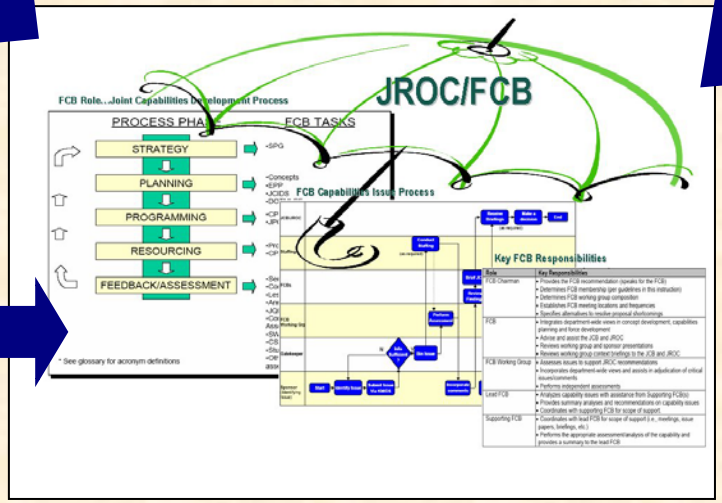
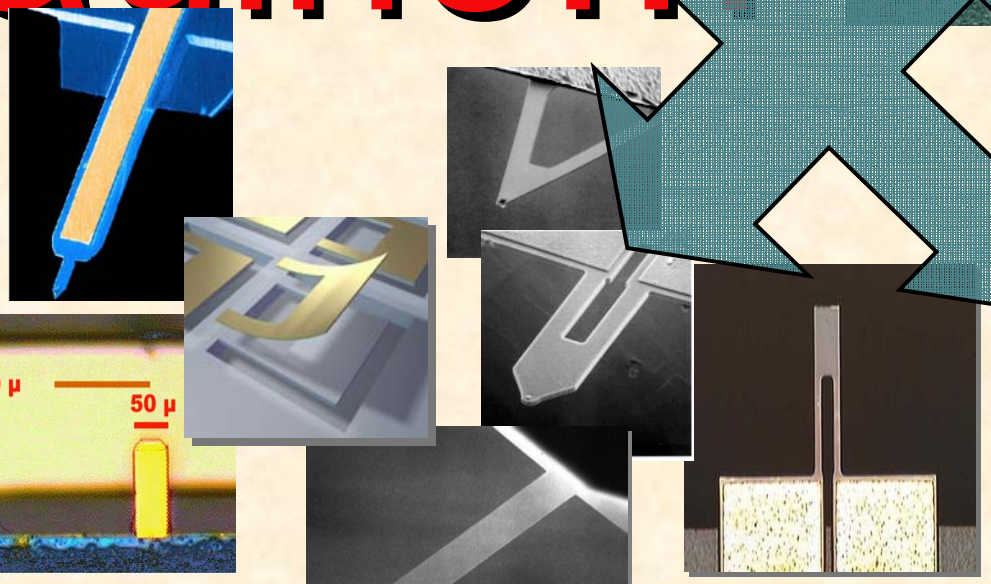
•CFAST
•AMCOM
•DOE
•DTRA
•PEOs
•MDA
•Associations
•Corporate
•DIA
•NASA
•Other 3-letter Agencies
National Security
Homeland Security
Logistics Crosswalk?

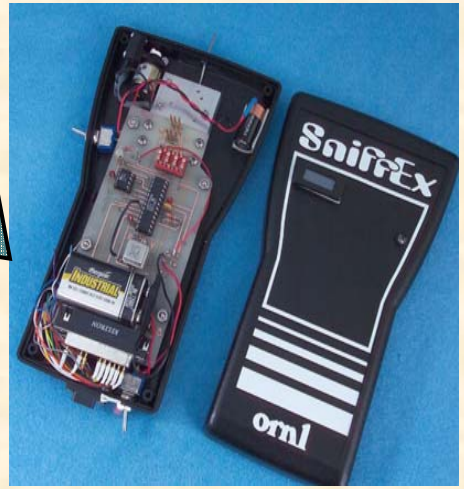

Air Force Model?
Gaps
Shortfalls
ORNL

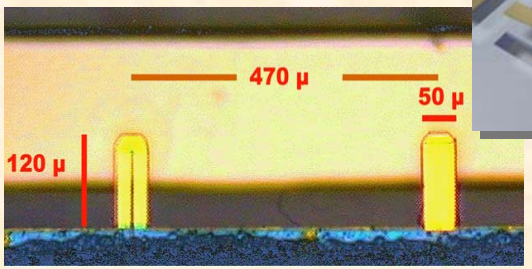

JROC/FCB
PROCESS PHA
FCB TASKS
STRATEGY
PLANNING
PROGRAMMING
RESOURCING
FEEDBACK/ASSESSMENT
FCB Capabilities Issue Process
Key FCB Responsibilities

Imagine...

SniffEx
oml
OAK RIDGE NATIONAL LABORATORY




SniffEx
oml


470 µ
50 µ
120 µ

EMES
Evacuation Monitoring and Accountability System

Evacuation Monitoring and Accountability System

Providing Accountability for Personnel and Critical Assets During Evacuation

- An automated system
- Latest radio frequency identification (RFID) technology
- Custom designed software that can be used either with or without current building access control system
- Tracking of personnel and equipment within zones of the building allowing first responders to know where to target their search and rescue efforts.

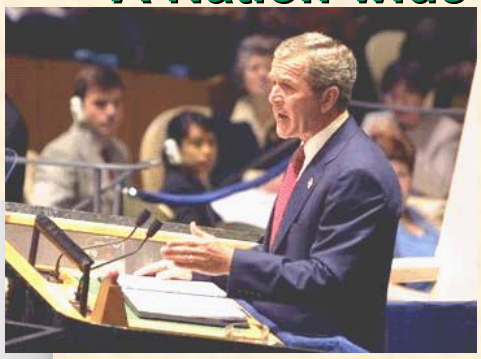
- Fires, acts of nature and acts of terrorism
- Sophisticated tool and extremely robust system
- Extremely flexible architecture can be designed to meet user requirements/budgets

- Duplicates accountability data at a remote site
- Facility managers and first responders are able to track the evacuation progress on PDAs or laptop computers
- Updated in real time
- Provides for the accurate and timely accountability of personnel and equipment during an emergency evacuation

OAK RIDGE NATIONAL LABORATORY
MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY

A Nation-wide Problem

SensorNet



"It is crucial for … personnel to have and use equipment, systems, and procedures that allow them to communicate with one another."

The National Strategy for Homeland Security

- The Nation's public safety information infrastructure… **"stove-piped" or "island" networks**.
- No **"universally available, affordable data infrastructure"** for public safety.

Material Protection, Control & Accountability Program

Fig. 2 Cargo Railcar

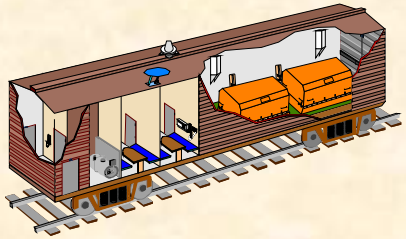


Fig. 3 Cargo Railcar Layout

Fig. 4 Guard Railcar

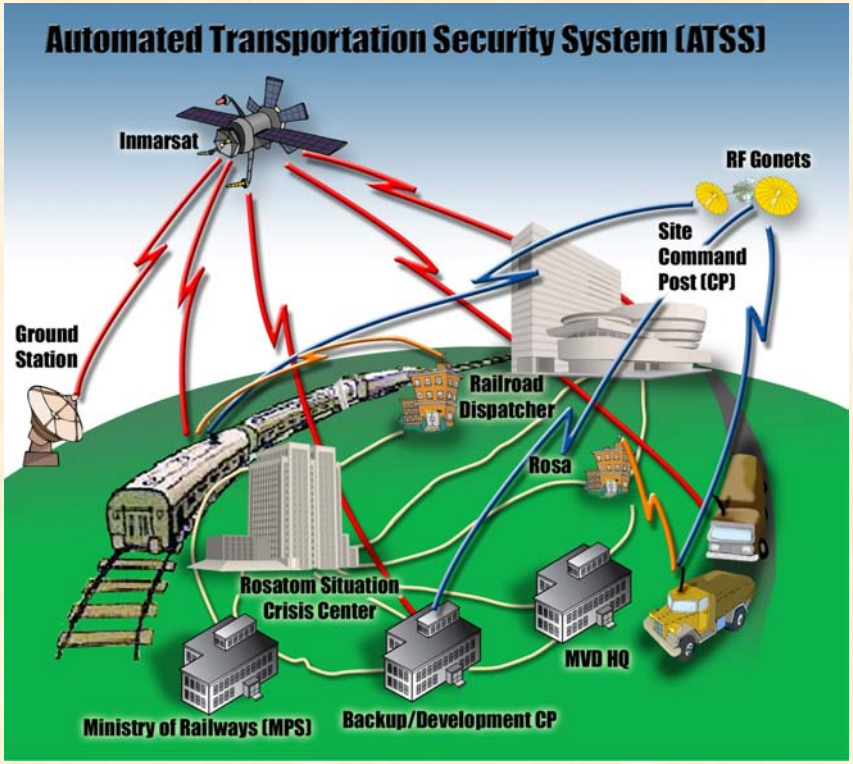


Fig. 1 ATSS

Fig. 11 Command Post Screens

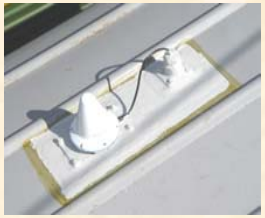


Fig. 10 Satellite Communication Equipment

Fig. 9 Command Post Monitors

Fig. 5 Security Overpack

Fig. 6 Escort Vehicle

Fig. 7 Cargo Vehicle

Fig. 8 Sarov Demonstration

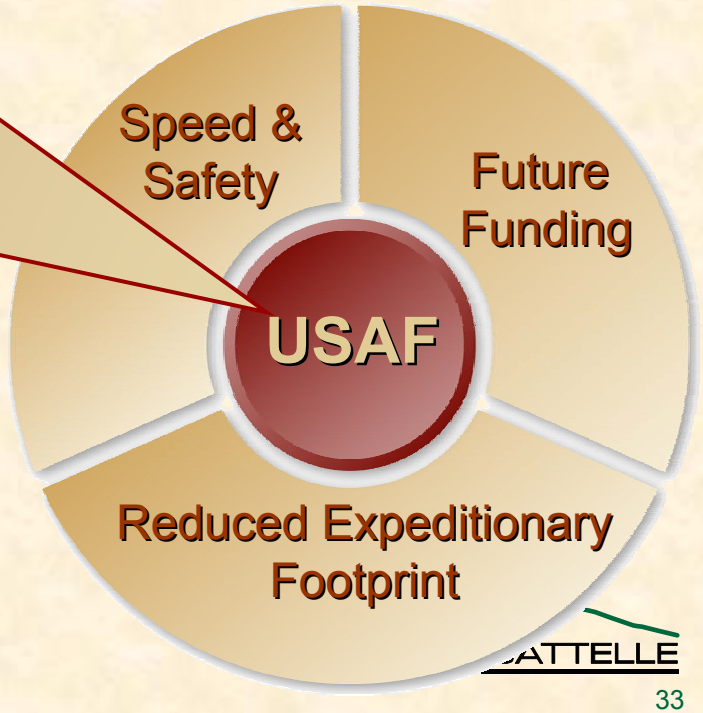
Human Amplification Technology (HAT)

1995…Next Generation Munitions Handler System

1997…Advanced Human Amplifier Testbed

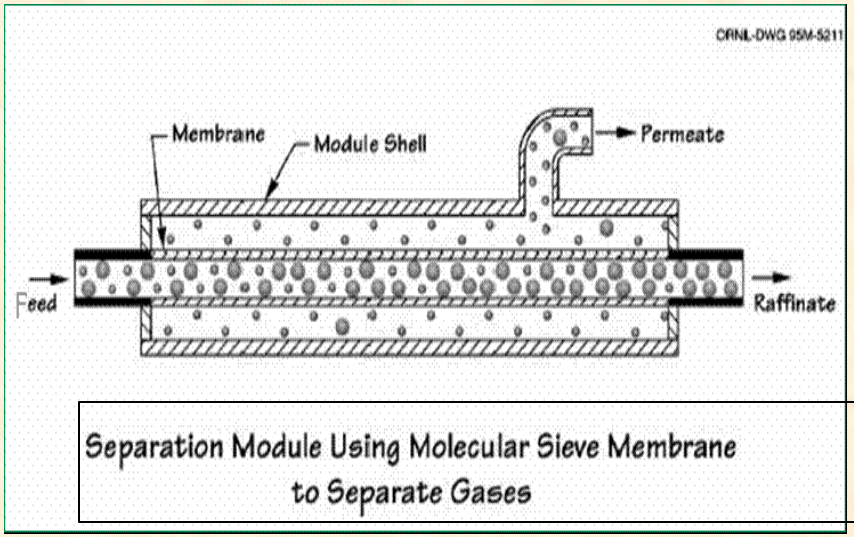
2000…DARPA's Exoskeleton Program

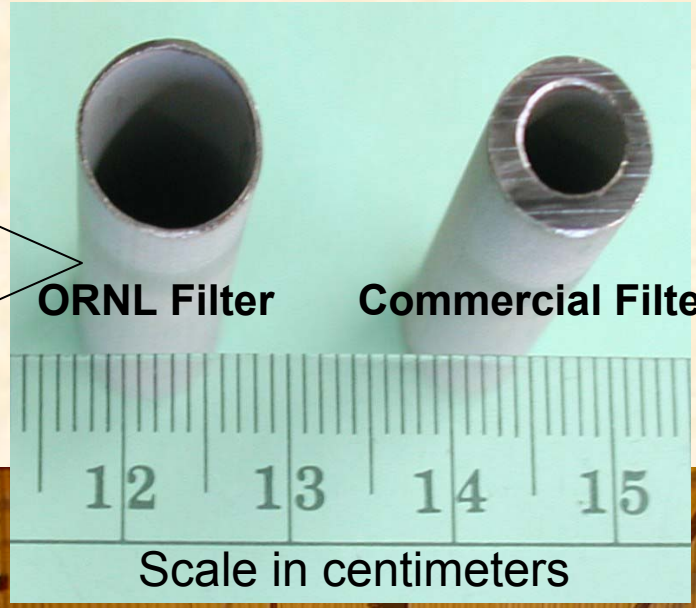
2003…Navy's Advanced Omni-Directional Transporter



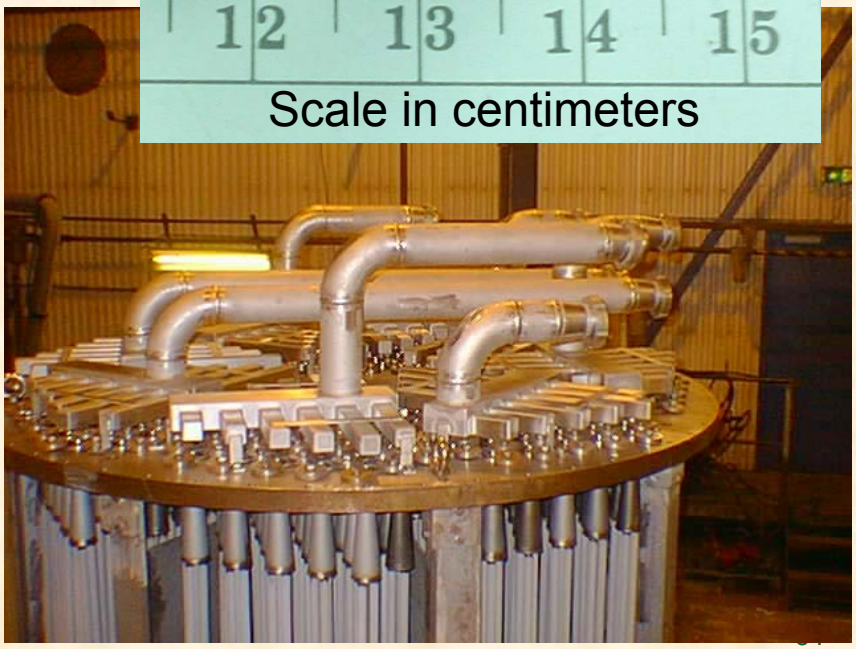
BATTELLE

ORNL's Inorganic Membranes—Great Potential for Water/Air Purification





- ✓Membranes are robust—sterilized with steam, heat, microwaves, direct resistance heating
- ✓Membranes are rugged & last for tens of years
- ✓Manufacturing costs are low
- ✓Purification does not rely on chemicals
- ✓Membranes may be used to polish air/water supply systems or functionalized variants of the ORNL membranes
- ✓Systems can be scaled
- ✓Filtration performed at surface (i.e. not a depth filter)…membrane is cleanable
- ✓Cross-flow configuration can minimize fouling



Chameleon...Cognitive Radio for TTL (SF2CR)

ORNL's State of the Art:

- Software Defined/Cognitive Radio Rapid Development Platform (~3.5"x5"x2")
- Multi-waveform capable & software reconfigurable
- RFID, SATCOM, GPS & Sensor capable
- Can provide cross-banding between CR tags/nodes, other sensors/networks, other tags C4ISR networks, UAVs, and SATCOM reach-back
- Functional gateway for other tags--passive/active
- An Agile, Tagging, Tracking, Locating, Sensing & Communications Platform

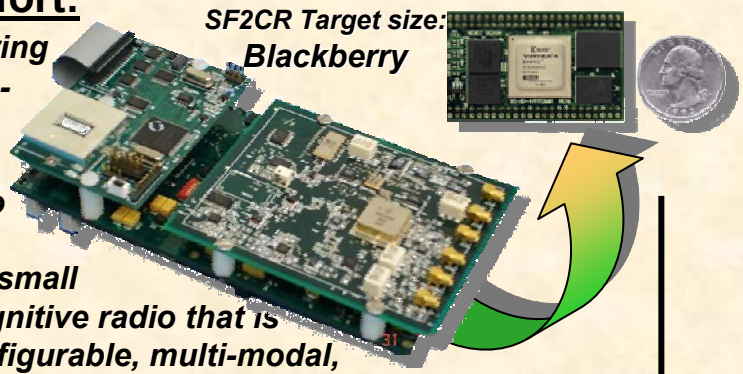
ORNL Potential:

- Baseline for CR capabilities supporting global real-time in-transit visibility initiatives

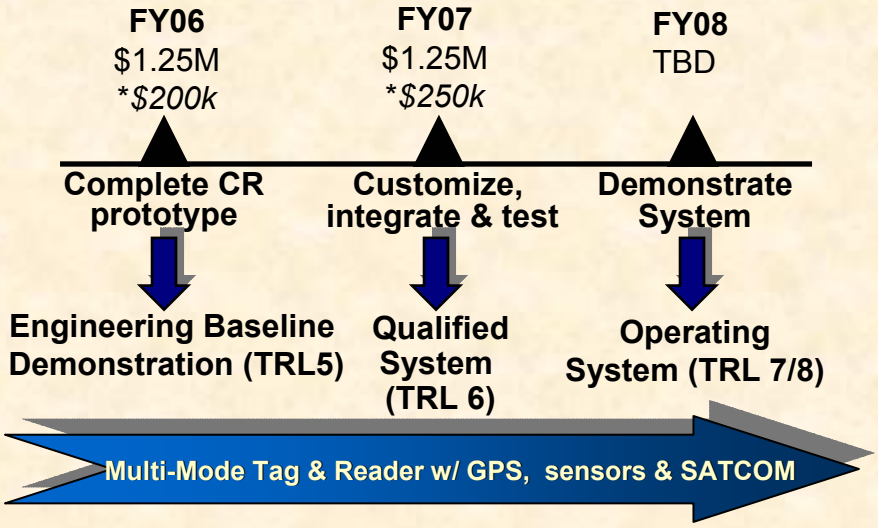
Application	Traditional Approach	ORNL Approach
Tag	Preconfigured, single-mode	Multi-mode, software recon- figurable (SR)
Reader	Single-mode, limited coverage	Multi-mode, SR
Network	Fixed infrastructure, limited connectivity	Mesh Networks: Multiple tiers—Radio to Radio, Tag to Tag
Data	Specified fixed format & path	Customizable to multiple standards

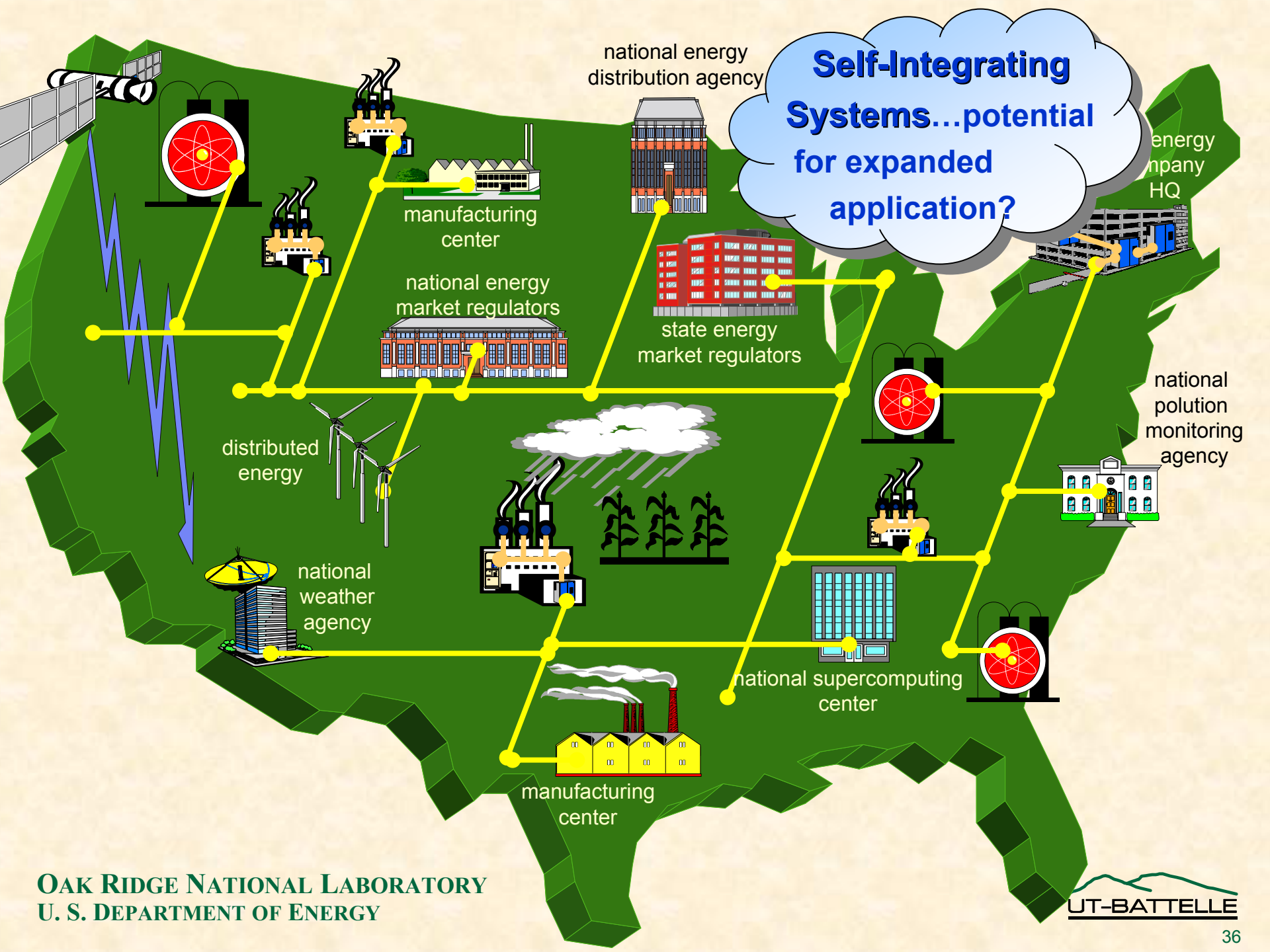
Focus of Effort:

Leverage maturing ORNL software-defined radio prototype development to produce and demonstrate a small form-factor cognitive radio that is software reconfigurable, multi-modal, and able to operate on multiple waveforms (asymmetric with adjustable bandwidth and low probability of intercept and detection) to provide sense and respond operating data and asset visibility information.

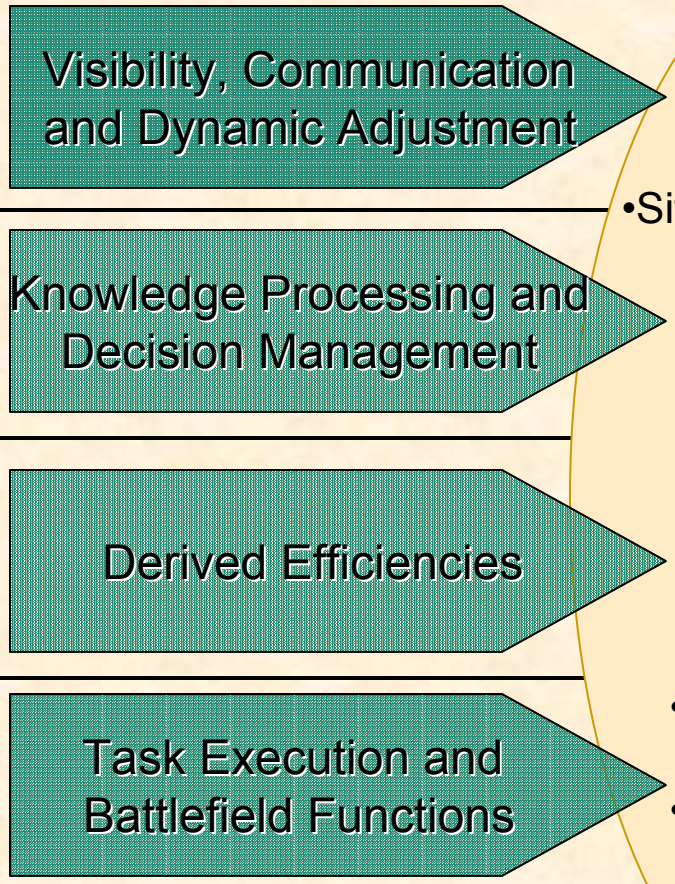


Cost/Schedule



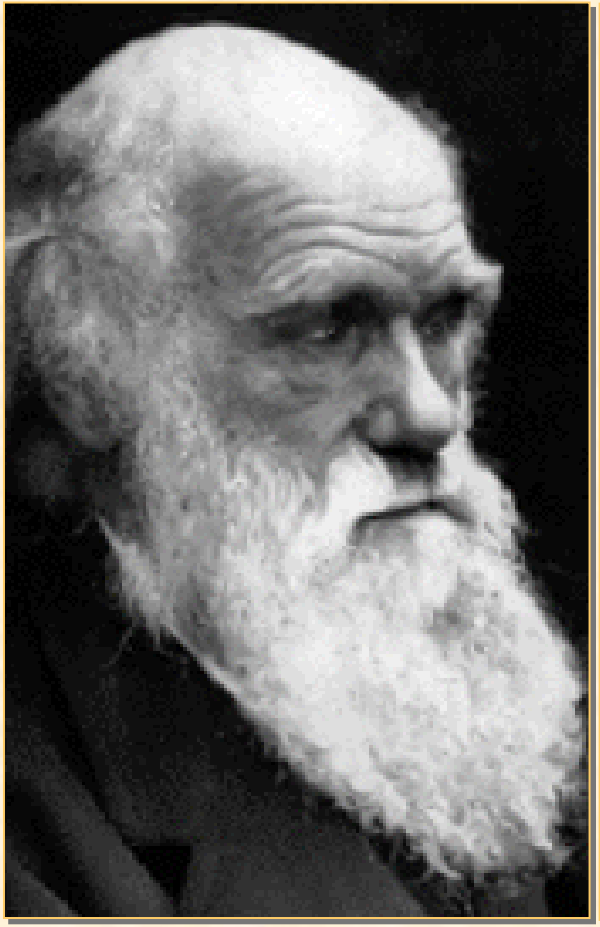

Self-Integrating Systems…potential for expanded application?
national energy distribution agency
energy mpany HQ
manufacturing center
national energy market regulators
state energy market regulators
national polution monitoring agency
distributed energy
national weather agency
national supercomputing center
manufacturing center

DOD Requirements ⟷ *ORNL Capabilities*



- •TTL &
- •Sensors
- •Situational Awareness
- •Log C2
- •Information Operations
- •Materials
- •Fuels
- •Energy
- •Supply Chain Exe/Mgt
- •Infrastructure & Power Projection
- •Maintenance

- ➢Cognitive Radio, RFID, Multi-capable Readers
- ➢CFAST Applications
- ➢Intelligence Generator
- ➢Knowledge Management
- ➢Intelligence Agents
- ➢AmmoGen
- ➢Superhydrophobics
- ➢Metals, Ceramics, Composites Carbon Foam, Titanium
- ➢Gas to Liquid Processes
- ➢Inorganic Membranes
- ➢Diagnostics/Prognostics
- ➢Electrical Signature Analysis
- ➢MABES/SURGE
- ➢Hybrid Lighting
- ➢Weigh-In-Motion

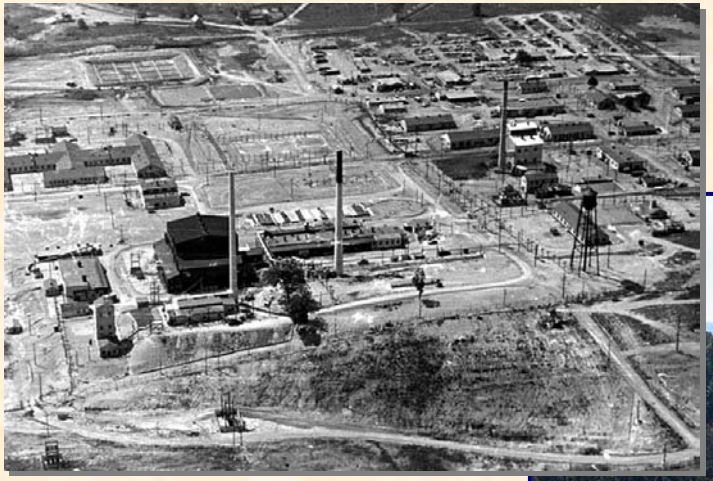


"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change."

– Charles Darwin

“The woodpecker might have to go”

ORNL…ready for the next Grand Challenge!



Multi-National Logistics Transformation – A United Kingdom Update

Air Vice-Marshal Kevin Leeson

Assistant Chief Of Defence Staff
(Logistic Operations)
United Kingdom Ministry of Defence

ACDS LOG OPS

The UK Defence Logistics Programme

'We must not allow cost and efficiency alone to be the sole drivers of our thinking. We must never forget that the purpose of logistics is to maximise the freedom of action of the operational commander'

Rt Hon Adam Ingram MP, Minister of State for the Armed Forces

'To deliver increased logistics effectiveness, greater coherence is required across the entire process, end to end and through life'

Gen Sir Kevin O'Donoghue, Chief of Defence Logistics

www.dlo.mod.uk

ACDS
LOG
OPS

Themes of the Defence Logistics Programme

Coherent
Timely
Delivery of
Required
Logistics

ACDS LOG OPS

Coherent, Timely Delivery of Required Logistics

- Force Elements fully supported
- Deficiencies mitigated
- Contingency/War Stock Optimised
- Timely delivery

ROYAL AIR FORCE
ZZ172

ACDS
LOG
OPS

Themes of the Defence Logistics Programme

Coherent Timely Delivery of Required Logistics

Comprehensive Logistics Capability Planning and Risk Assessment

ACDS LOG OPS

Comprehensive Logistics Capability Planning

- Logistics planning properly embedded in the Departmental Programming System
- Risk properly managed
- Serious about Thru' Life Management
- A Logistics Process Owner

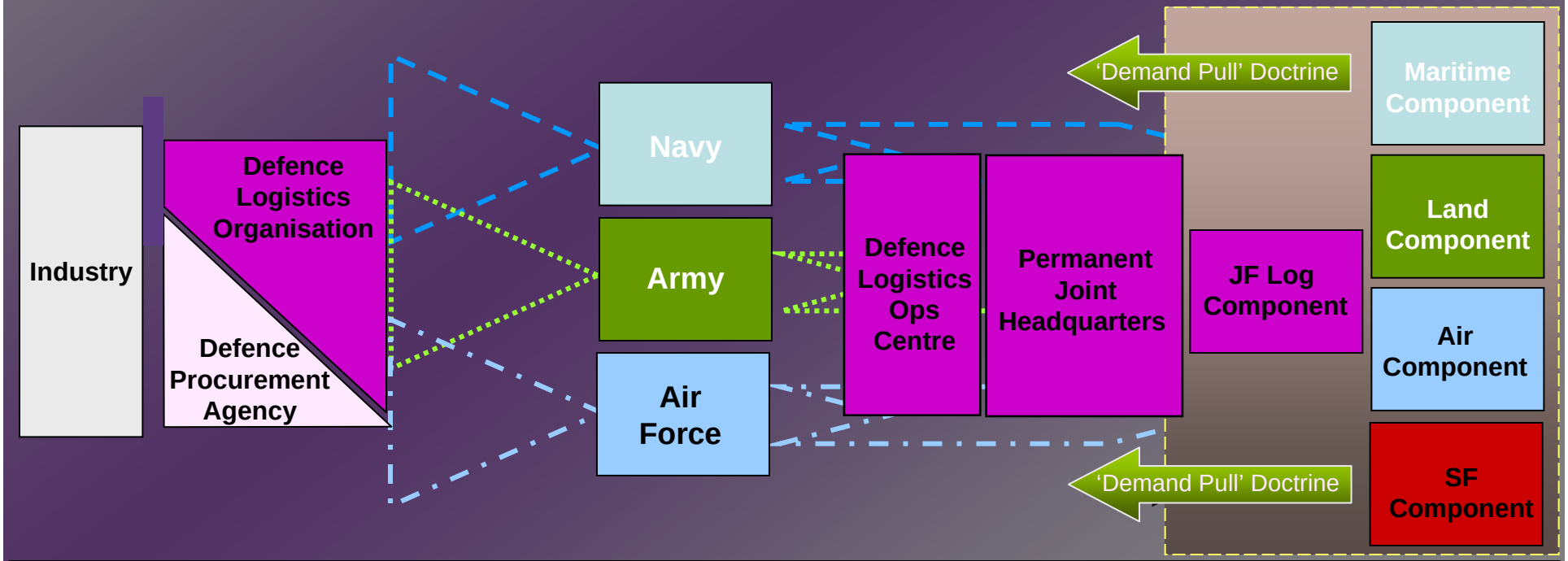
Defence Logistics Process Owner

ACDS LOG OPS

Chief of Defence Logistics

Assistant Chief of Defence Staff (Logistic Operations)

Director General Logistics Transformation



CDL ensures the required effect is achieved from the end-to-end logistic process

ACDS LOG OPS

Themes of the Defence Logistics Programme

Flexible Command & Control

Coherent Timely Delivery of Required Logistics

Comprehensive Logistics Capability Planning and Risk Assessment

ACDS
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OPS

Flexible Command and Control

- Clear C2 Established
- Coherent Roles and Responsibilities defined
- Comprehensive Logistics Information Systems

Recognised Theatre Logistic Picture

JFLogCHQ

Search Window | Search

URGENT | Moving and extendible Banner for urgent messages …

PJHQ | JTFHQ | MCC | LCC | ACC | SFCC | Links

EDIT

Dynamic and composite internal links to:

- **Web Folders**
- **Div Areas**
- Mission Support material
- **Contacts List**
- **User Guides**
- **Help/FAQ.**

Security State & Threat Level

‘What’s New?’

New Time Scale

Item Name

041205 JTFHQ Intsum 504
041204 JTFHQ ASSESSREP054 Encl 1 Good News Tuesday
041204 JTFLogC PERSREP1
041204 JTFLogC LOGASSESSREP
041204 JTFACHQ_ASSESSREP_49_Final
041204 JTFHQ Intsum 503

Operational Pictures

Latest Reports

ASSESSREP
DOWNREP
INTSUM
PERSREP
LOGASSESSREP
SINCREP

Security

NBCD State
ROE
Threat Analysis

Logistic Situation

Operational RTLP
Land Logistic Picture
Air Logistic Picture
Mar Logistic Picture
MISCRIT Table
SUSTAT - JFLogC
SUSTAT - JFMCC
SUSTAT - JFLCC
SUSTAT - JFACC
Repair Facilities
Staffing Issues
Log Intelligence

Key Documents

Battle Rhythm
Campaign Directive
FRAGOs
Op Orders
Media Lines to Take
Mission Analysis
Presentations
Redeployment Instr

Movements

Air Move Programme
Sea Move Programme
Tactical Move Prog

Real Life Support

Daily Orders/Notices
Force Protection Plan
IM Instructions
Standing Orders
Telephone Directory
World News
Visit Programme
WAR Diary

GMT **09:35:10** Theatre time **12:35:10**

Content: JFLogCHQ: SO2 Infoman S.Cerney Ext XXXX

A389
F235

ACDS LOG OPS

Themes of the Defence Logistics Programme

Flexible Command & Control

Minimised Demand on Logistics

Coherent Timely Delivery of Required Logistics

Comprehensive Logistics Capability Planning and Risk Assessment

ACDS LOG OPS

Minimised Demand on Logistics

- Industry incentivised to greater availability
- Active engagement from all stakeholders
- Greater burden sharing in Coalition Operations

T45

ACDS LOG OPS

Transformation of Tornado Support

Single Depth Support Hub at Main Operating Base - from 4 locations to 1

- **Extensive Leaning, involving BAES & Rolls Royce at RAF Marham**
- **Partnered support solutions for whole platform availability on-base**

•Reduced operating costs by 50% over 5 yrs - £321M saved

•RAF Manpower reduction of 500

•Engine rejections down 50%

•Aircraft in routine servicing down from 22 to 16 by 2008

•Combined maintenance and upgrade possible

ACDS LOG OPS

Themes of the Defence Logistics Programme

- Flexible Command & Control
- Minimised Demand on Logistics
- Coherent Timely Delivery of Required Logistics
- Optimised End-to-End Support Chain

Comprehensive Logistics Capability Planning and Risk Assessment

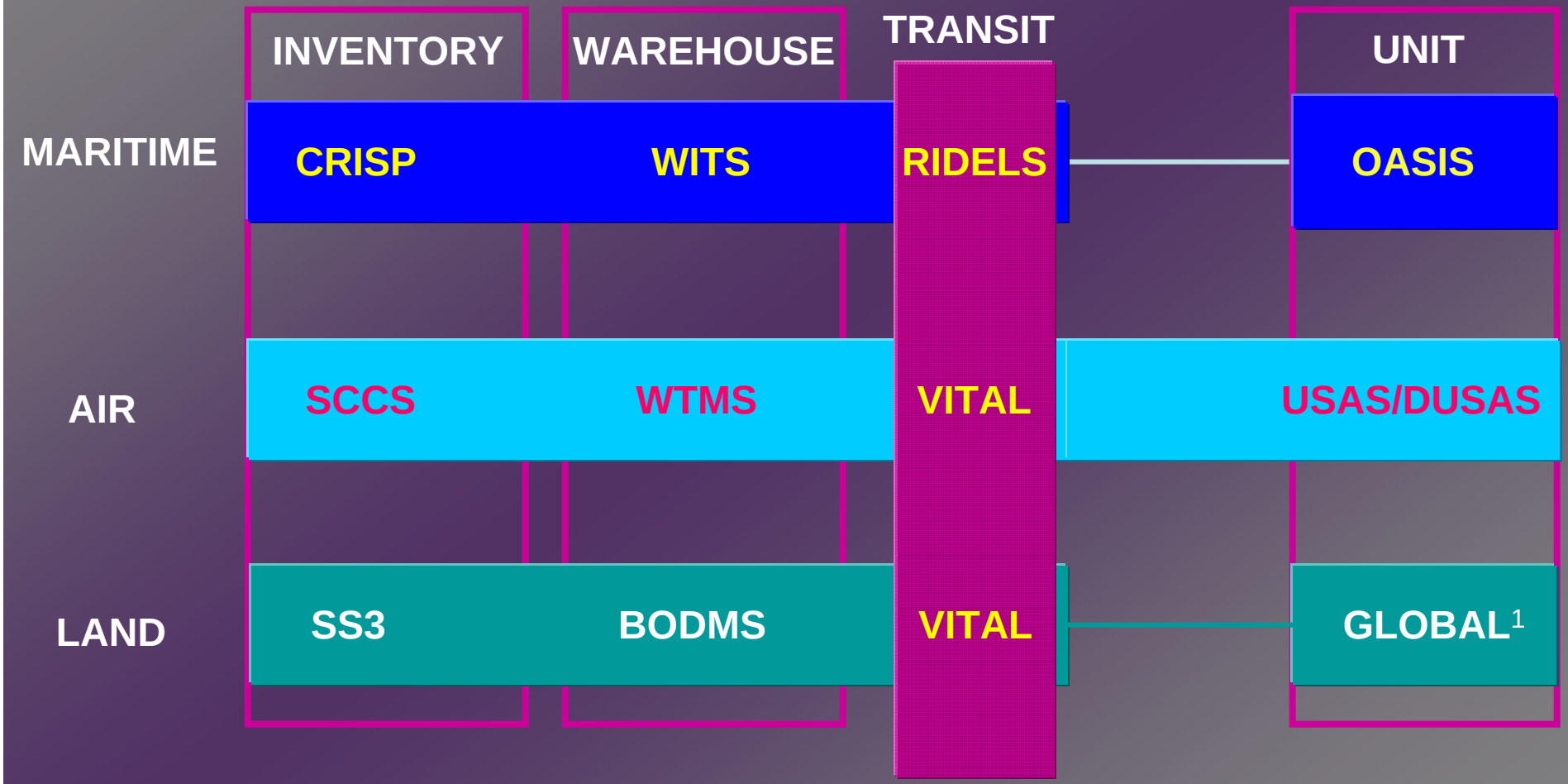
ACDS
LOG
OPS

Optimised End to End Support Chain

- Logistics infrastructure streamlined
- Full stock and asset visibility available end to end

ACDS LOG OPS

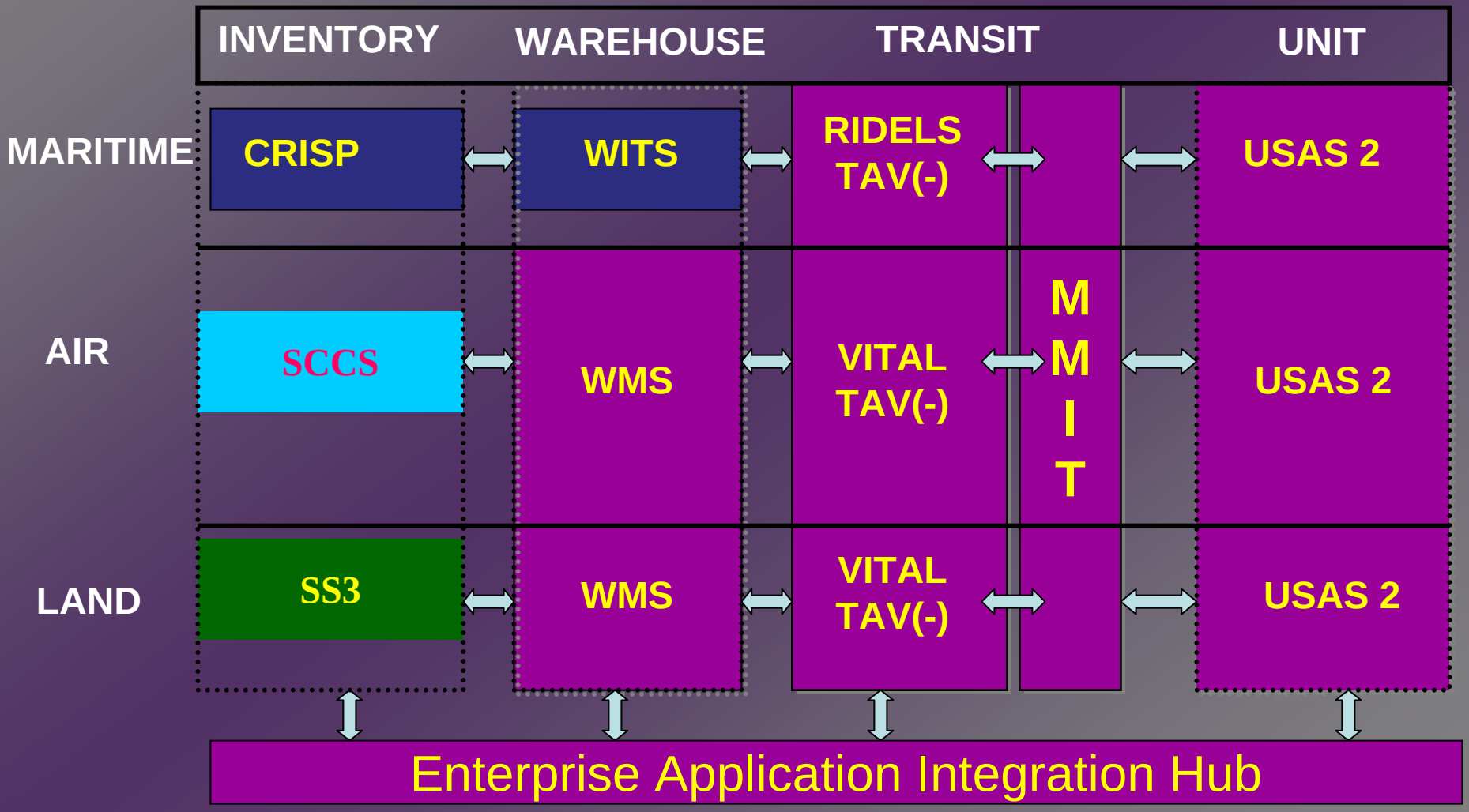
Current Logistic IS Architecture



1. GLOBAL is not deployed at Unit level - only at 2nd Line

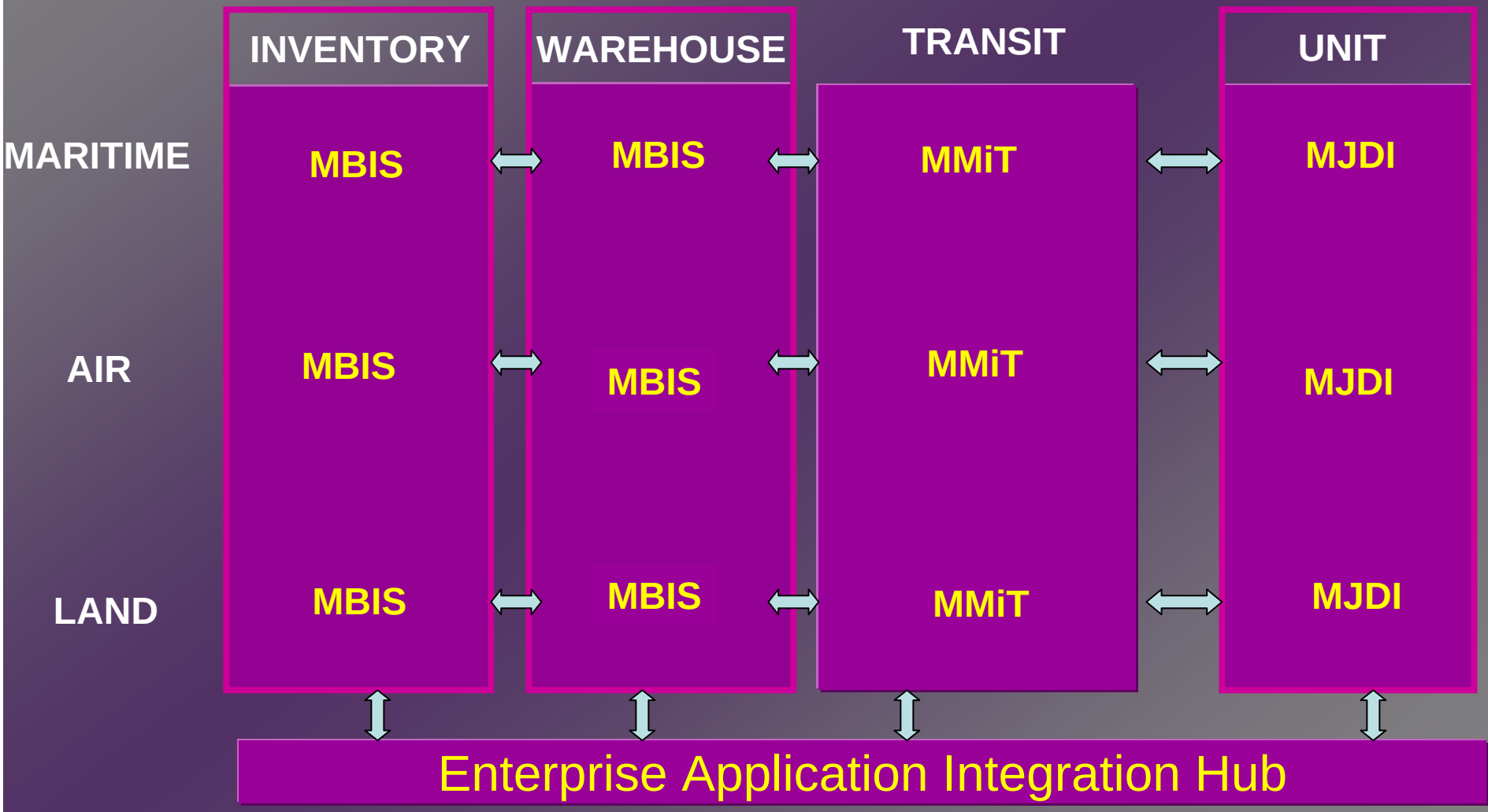
ACDS LOG OPS

Rationalised Logistic IS Architecture -2005 to 2010



ACDS LOG OPS

Logistic IS – Beyond 2010



ACDS LOG OPS

Themes of the Defence Logistics Programme

- Flexible Command & Control
- Minimised Demand on Logistics
- Coherent Timely Delivery of Required Logistics
- Optimised End-to-End Support Chain
- Unifying Logistics Ethos

Comprehensive Logistics Capability Planning and Risk Assessment

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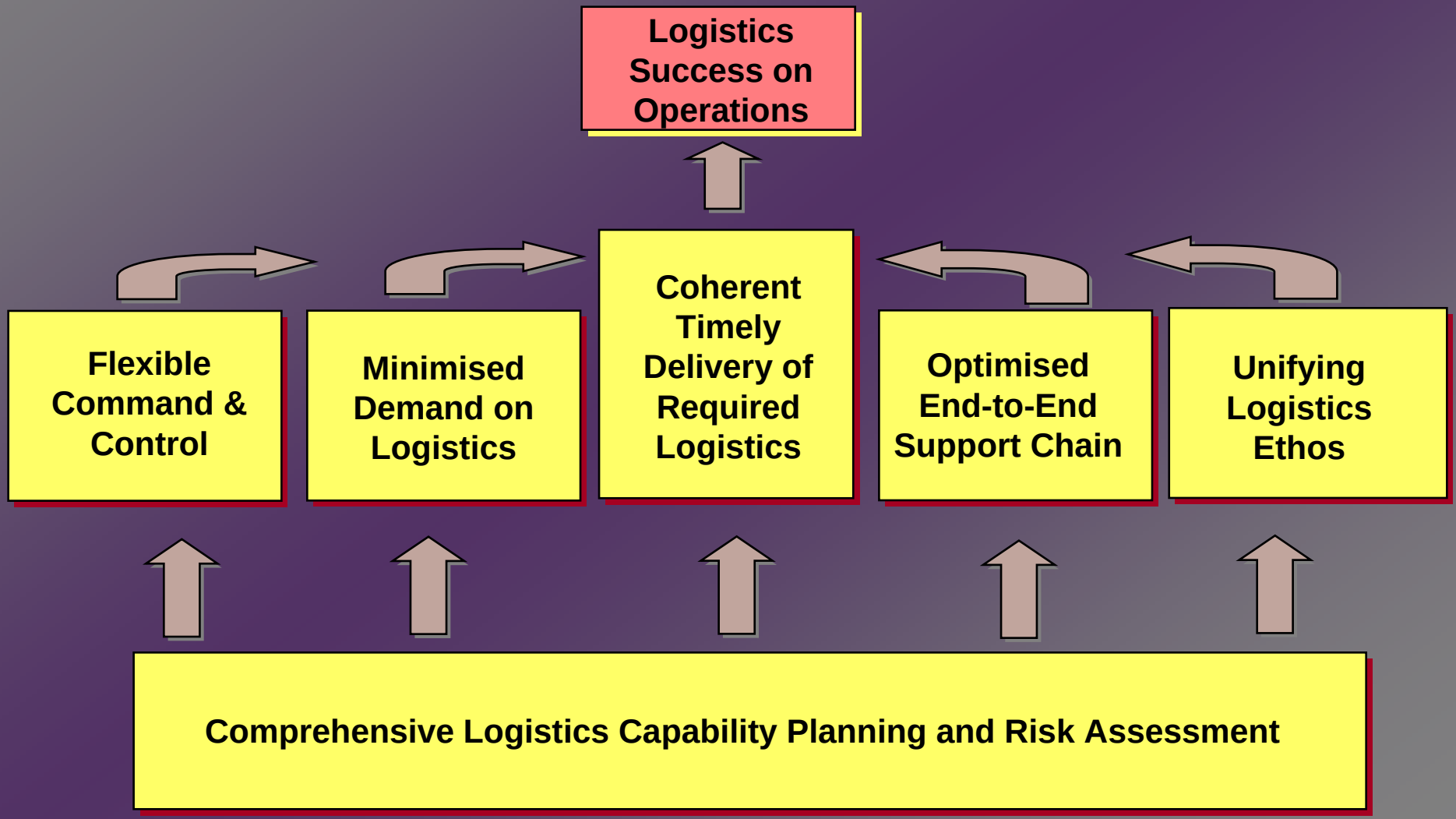
LOG
OPS

Unifying Logistics Ethos

- Delivery of training to meet current and future requirements and new competencies
- Incentives and appropriate behaviours in place

ACDS LOG OPS

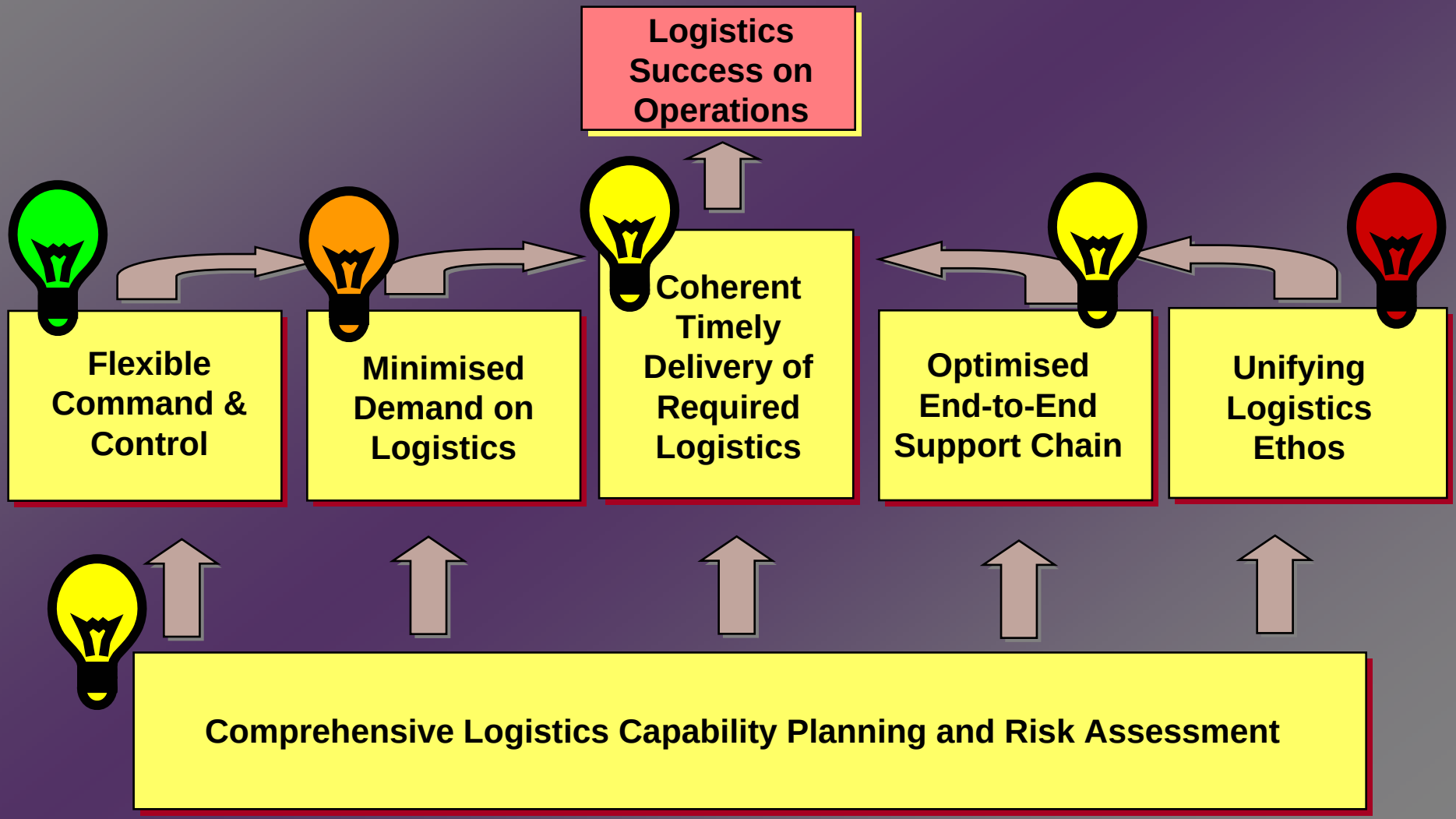
Themes of the Defence Logistics Programme



L3009
CARICAN BAY
EnviroSat

ACDS LOG OPS

Transformation – Current Assessment



Multi-National Logistics Transformation – A United Kingdom Update

Air Vice-Marshal Kevin Leeson

Assistant Chief Of Defence Staff
(Logistic Operations)
United Kingdom Ministry of Defence

NDIA 22nd Annual Logistics Conference

Joint Logistics Leadership Fireside Chat

VADM Keith W. Lippert, SC USN
Director
Defense Logistics Agency

Working With Our Joint Logistics Partners…

- DLA J4: Customer Operations & Readiness
- Performance Based Agreements (PBA)
- Performance Based Logistics (PBL)

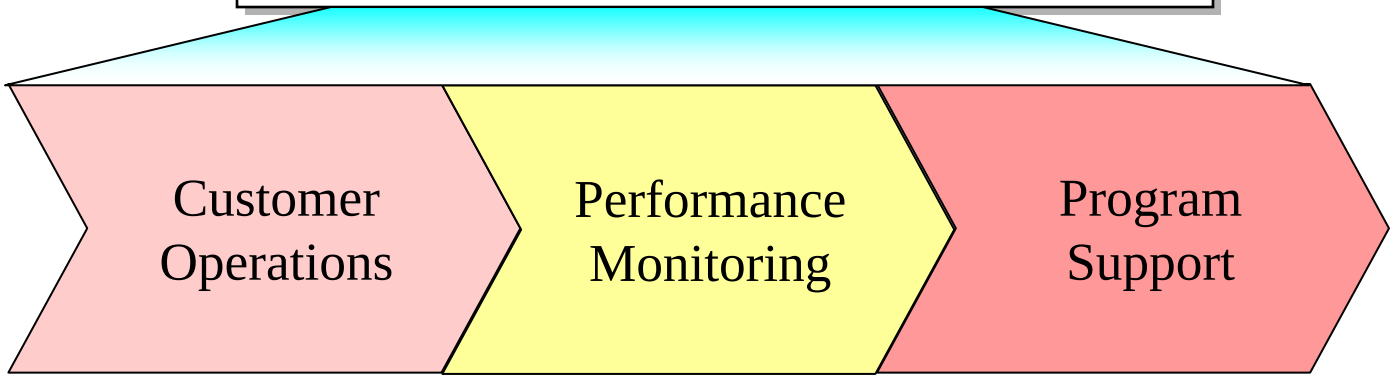
DLA J-4: Key Functions/Capabilities

DLA J-4 Functions/Capabilities Required

DLA J-4 Mission

DLA J-4 engages customers around the world to maximize readiness and logistics combat power by leveraging an enterprise solution.

Key Functions/ Capabilities



- **Customer engagement and communication**
- **Assessing performance**
- **Driving change**

DLA J-4 Organization Structure	• **Will consolidate customer engagement activities to better bring the customer voice into DLA** • **Will enhance performance assessment capability** • **Will lead change by integrating formerly disparate activities**

Performance Based Agreements (PBA's): Purpose & Structure

- PBA's establish a framework for the coordination and alignment of resources in support of our customers

- PBA's define in explicit terms what is being promised to the customer

- PBA's will replace existing command to command Memorandums of Understanding & Agreement

- PBA's are an integral part of the Customer Relationship Management framework

PBA Structure
Objective and Scope
Content
Roles and Responsibilities
Performance Measures
Revisions and Flexibility
Accountability and Oversight
Contingency Agreements
Execution Agreements

Our PBA Partners

- **Signed Overarching Performance Based Agreements**
  - **U.S. Army, G-4** — **Signed Dec 05, 2003**
  - **U.S. Marine Corps, HQ (I&L)** — **Signed Jan 22, 2004**
  - **U.S. Navy, N-4/NAVSUP** — **Signed Sep 05, 2005**
  - **U.S. Air Force, A4/AFMC** — **Signed Mar 22, 2006**
  - **EUCOM, DCG/J-4** — **Signed Mar 02, 2006**

- **Feedback-Loop**
  - **Partnership Agreement Council (Quarterly)**
  - **Service/DLA Flag/SES Quarterly Meetings**
  - **Annual Service/DLA Days**

Expect to complete all Combatant Commander PBA's by September 30, 2006.

Performance Based Logistics (PBL): DLA's PBL Strategy

Two Options/Targets of Opportunity:

1. Junior Partner to Service or Contractor Product Support Integrator

and/or

2. PMs' Choice as Product Support Integrator in the Long-Term

Full Court Press on Option 1; Pilots for 2

Performance Based Logistics: Working With Our Industry Partners

- **Super Hornet (F/A-18 E/F)**
  - PBL Signed: December 23, 2005
  - The Relationship: NAVICP contract with Boeing. DLA is a participant
  - Expected Benefits: Reduced life cycle costs thru centralized ILS management of configuration, obsolescence, engineering, reliability, maintenance planning, etc.

- **Joint STARS Total System Support Responsibility**
  - PBL Signed: AF/Northrop Grumman, September 2000
  - The Relationship: DLA provides common consumables to Northrop Grumman
  - Expected Benefits: Exploit centralized management and provide aircraft and mission systems availability at reduced cost

Performance Based Logistics: Working With Our Industry Partners

- **Army's Future Combat System**
  - PBL Signed: Army/Boeing March 2002
  - The relationship: MOA with Army using DLA as a supplier of managed items, Distribution, Cataloging, and Logistics Information Services.
  - Expected Benefits: Reduced life cycle cost thru centralized end to end wholesale and retail supply chain management, improved logistics common operating environment thru integrated data environments, and improved initial fielding thru early cataloging and provisioning support

- **Kelly Aviation Center (KAC)**
  - PBL Signed: 23 May 2003
  - The Relationship: KAC uses DLA as Preferred Supplier of "Contractor Furnished Material."
  - Expected Benefits:
    - **Increase Reliability on the T56 & TF39 Engines**
    - **Increase Time on Wing**

Defense Logistics Agency

Supporting the Military Services & Combatant Commanders for Over 40 Years

NDIA Logistics Conference

Panel: Network Centric Logistics Operations - Industry Perspective

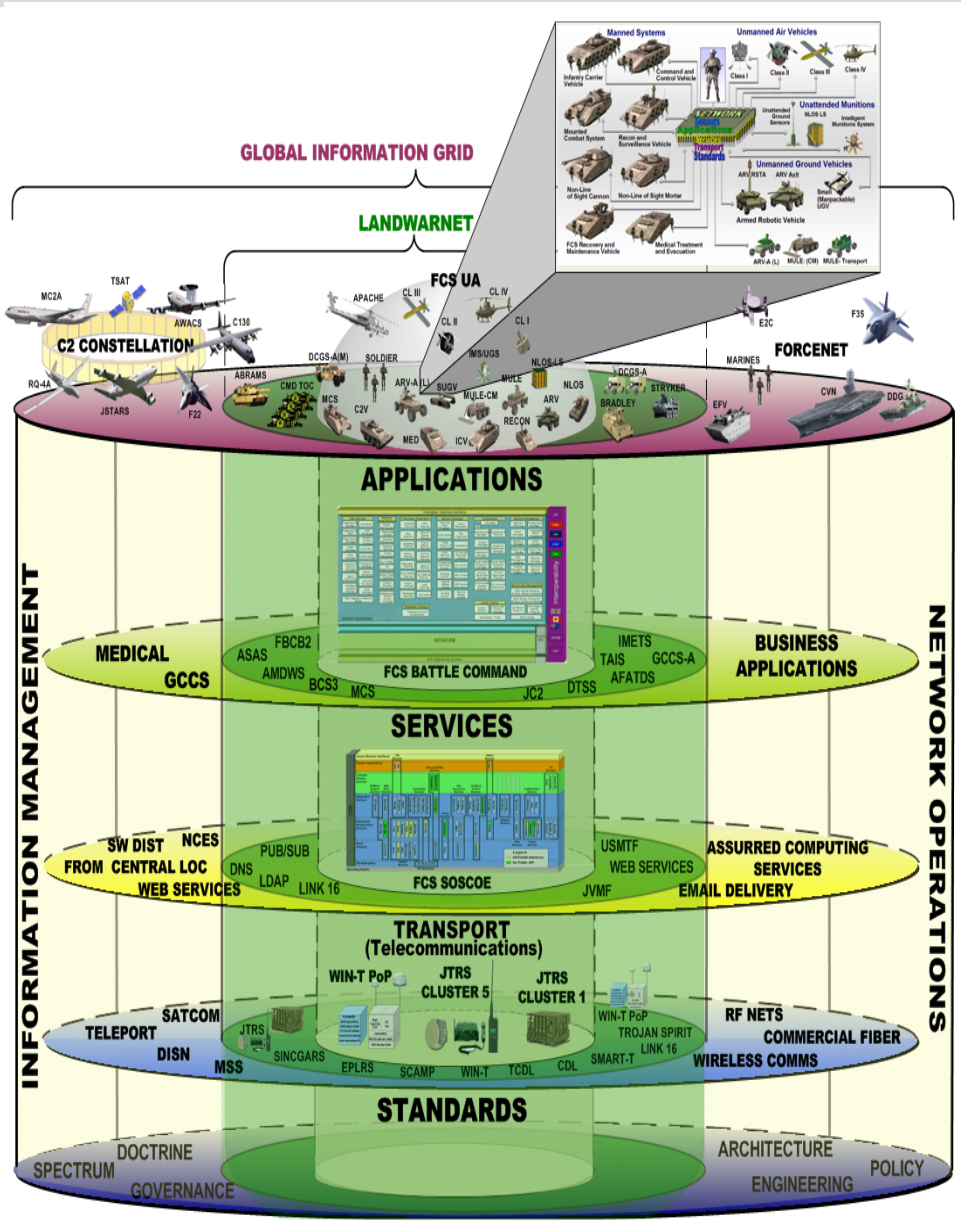
LTG (Ret) Charles S. Mahan, Jr.

VP, Homeland Security and Defense, SAP Public Services, Inc.

THE BEST-RUN BUSINESSES RUN SAP

SAP's NCW vision

- Improve end-to-end, factory to foxhole logistics by enabling the integration of existing legacy systems with new modern technology
- Facilitate integration of DoD systems with commercial providers to extend the supply chain and improve asset visibility
- Allow the DoD to create composite applications, which provide unique functionality but are constantly integrated with core IT systems
- Enable the DoD to redesign business processes that can be adjusted rapidly to satisfy the nations requirements for its armed forces



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NCW on the Battlefield

- **Theater Readiness Status – How? How often?**
  - Units, services, capabilities, materiel (autonomic status is best but lacks standardization - challenge)
- **Unit readiness and equipment readiness**
  - Unclassified information at the small unit level, when aggregated, rapidly becomes sensitive, if not classified
- **Force Multiplier**
  - Removing the human element in diagnostics
  - Predictive failure of asset = less failure during critical battlefield situations
  - Maximize availability over lifecycle of the asset
- **Integrated Demand with Supply Chain**
  - Accurate spare parts forecasting
    - Minimize stock outs
  - Integrated with ERP eliminates the bottleneck at last mile
    - Analyze real-time component data across all deployed assets with roll-up dashboards to provide a complete asset availability
  - Improved financial accuracy
  - "Lack of visibility and variability is the mother of all inventory…"
    - Have to stock more and ship more when you don't know what you need.

THE BEST-RUN BUSINESSES RUN SAP

Logistics Technology Enablers

➢UID and the parts explosion capability of new systems

- Reduce (if not eliminate) the significant number of incorrect orders by ensuring that the service member ordering the part can see it
- Point and click – orders it, finds it in the shipment process
- Real time status and a series of “interrogators” capable of querying both active and passive RFID tags from a distance and enables organizations to:
  - Track/find people/equipment/materiel in transit
  - In storage/on the battlefield
  - Perform inventories (including weapons, munitions, sensitive items, drugs, maps, clothing, supplies, etc) in seconds vice hours/days/weeks
  - Search and rescue impact of having an individual carry with them a device that reports location (GPS phone signal).

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The End State for Logistics

➢**Smart and Reliable –** An asset with reliability, maintainability, and prognostic and health management (PHM) inherent in the design, enabling the entire AL Concept.

➢**Technology Enabled and Supported Maintainer –** Trained maintenance personnel, with information, instructions, tools, parts and materials.

➢**Integrated Training Environment –** Integrated training environment mission-qualified operators and maintainers, regardless of location.

➢**Intelligent Information Infrastructure –** Intelligent information infrastructure that captures, analyzes and identifies system characteristics and interfaces with legacy support systems to provide information on that asset for every user worldwide (Factory to Foxhole)

➢**Performance-Based Best Value Sustainment –** A business approach that equally weighs risk, schedule, cost and technical aspects to provide a cost effective, affordable support system that reduces total cost ownership over the life cycle.

THE BEST-RUN BUSINESSES RUN SAP

Lessons Learned:

- **Need for a standard "architecture" for transfer of data**
  - Data format must be standardized to capture - Miles logged, hours flown, engine/transmission "aberrations", etc.) from all platforms (trucks, tanks, helicopters, et al) to achieve total asset visibility

Must be managed by an enterprise-wide system

- System must be able to pull in data from onboard sensors and make it actionable – in real time
- System will use this data to trigger event (autonomic); to order parts needed, schedule maintenance activities, identify requirements for overhaul, etc etc etc
- System MUST be based to an Enterprise Services Architecture (ESA), which can be integrated seamlessly with ALL data sources across the enterprise/battlefield

Prioritization of data

- An increase in data can lead to paralysis through analysis
- “Sense and Respond” technology only works if there is a plan
  - Operational priorities vs. scheduled/requested maintenance = asset availability

THE BEST-RUN BUSINESSES RUN SAP

Presentation to the
National Defense Industrial Association
22nd Annual National Logistics Conference & Exhibition

Major General Loren Reno, USAF
Vice Director, Defense Logistics Agency

Defense Logistics Agency Today

- The Defense Logistics Agency:
  - World-wide, world-class organization designed to support the warfighters' logistics needs from factory to foxhole, and back.
  - DLA is owner-operator of several of our **National Treasures**
    - Defense Distribution System
    - Procurement infrastructure for 95% of DoD requirements
    - Defense fuels infrastructure
    - DLA workforce
  - Industry is a key partner in bringing best value to the warfighter
  - BRAC and the logic in the QDR are refining the approach to how DLA provides logistics to the joint force

DLA-Joint Led and Focused

CORPORATE STAFF

DIRECTOR

VICE DIRECTOR

COMMAND SERGEANT MAJOR

DLA Director
Vice Admiral
Keith W. Lippert
Supply Corps,
United States Navy

Vice Director
Major General
Loren Reno
United States
Air Force

CSM
Command
Sergeant Major
David Roman
United States
Army

DES Enterprise Support

J-1 Human Resources

J-3 Logistics Ops

J-4 Customer Ops

J-5 Enterprise Transformation

J-6 Information Ops

J-8 Financial Ops

J-9 Reserve Forces

Special Staff

BUSINESS UNITS

Defense Supply Center Columbus

Defense Supply Center Richmond

Defense Supply Center Philadelphia

Defense Energy Support Center

Defense Distribution Center

Defense Reutilization & Marketing Service

SERVICE ACTIVITIES

Defense National Stockpile

DLA Pacific

DLA Europe

DLA Central

Def Logistics Info Service

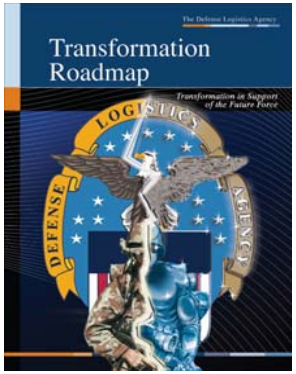
Document Automation & Production Service

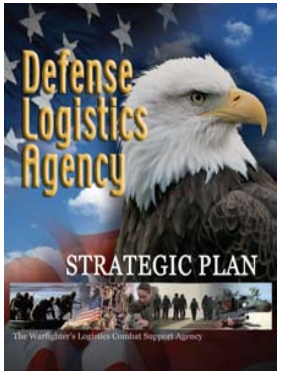
Improving Value to Customers

- We maintain an end-to-end view of the DoD supply chain,
- We optimize the path from factory to foxhole and back
- Strategic inventory and stock positioning programs are on track
- Cost Recovery Rate best ever, DLA personnel levels lowest ever

Changing With Customer Needs

- DLA J-4 (Customer Operations) is a recent creation/evolution
- Customer linkage improves forecast…and satisfaction
- Positioned Customer Service Reps and Liaison Officers at key force junctures for effective communications.
- Road Map and Strategic Plan-in place and operating
  - Pace change, track progress
  - Tied to balanced scorecard

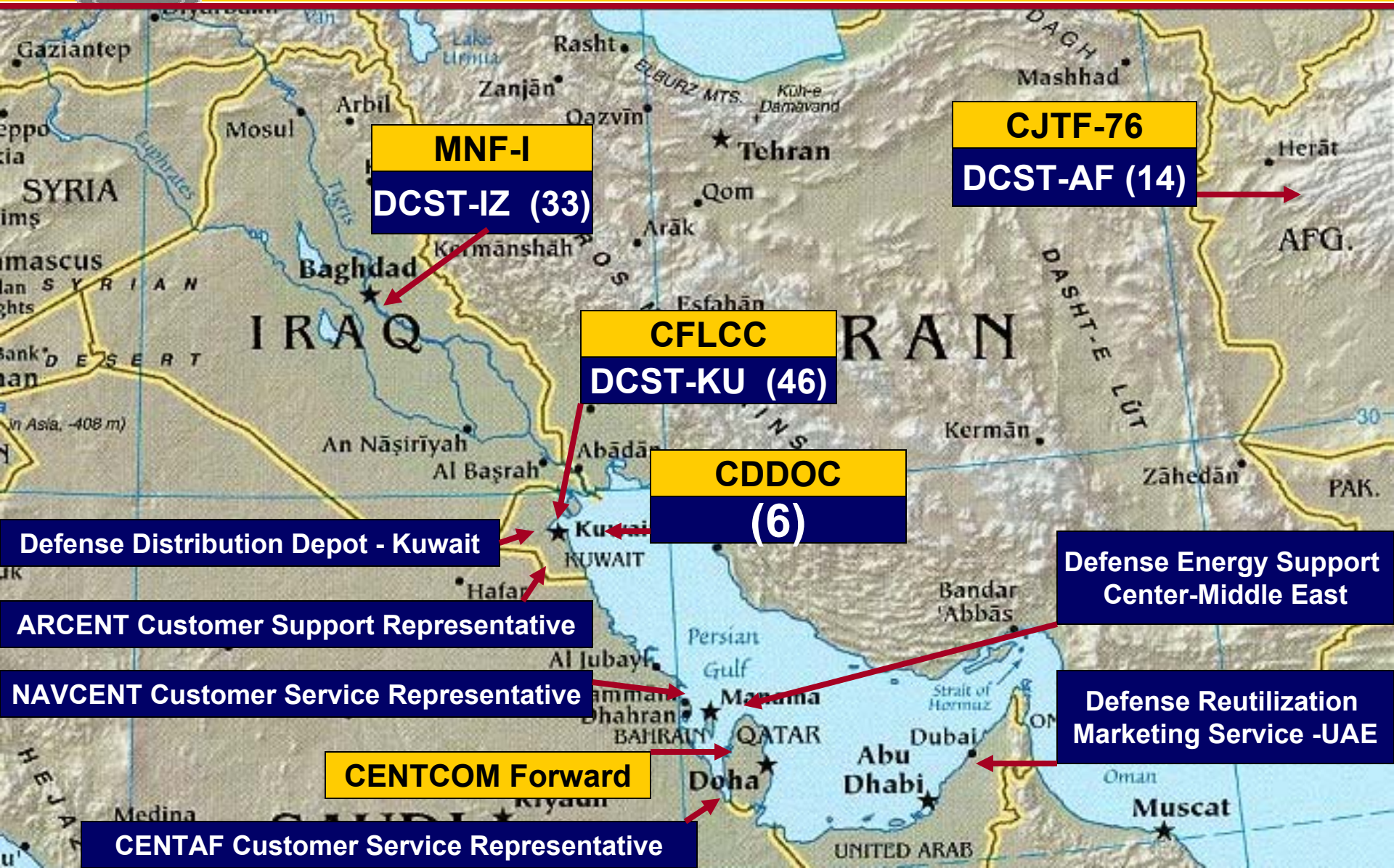




Flexible Supporting Deployed Forces

- Established DDKS: In-Theater Distribution Depot
- Adapting Fuel GLOCs to changes in theater
- Standing up in-theater OEF/OIF Retrograde capacity

OEF & OIF Support



BRAC Adding Efficiency

- Defense Distribution System improvements
  - 4 Strategic Distribution Platform (SDP)/Multiple Forward Distribution Point (FDP) plan
  - Supply support in Services' depot maintenance activities transferring to DLA
- Consolidating supply chain procurement where feasible
  - Depot–level reparables
  - Most consumable items
  - Privatizing of commodities

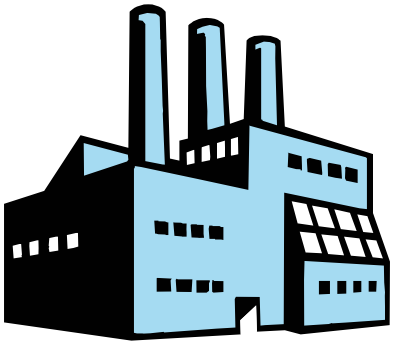
BRAC Adding Efficiency

BRAC Adding Efficiency

Increased Support and Surge Capability

CCP X 2 → CCP X 4

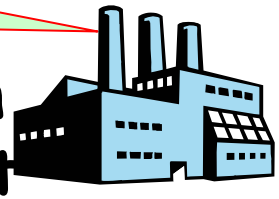
Decreased Inventory and Warehousing



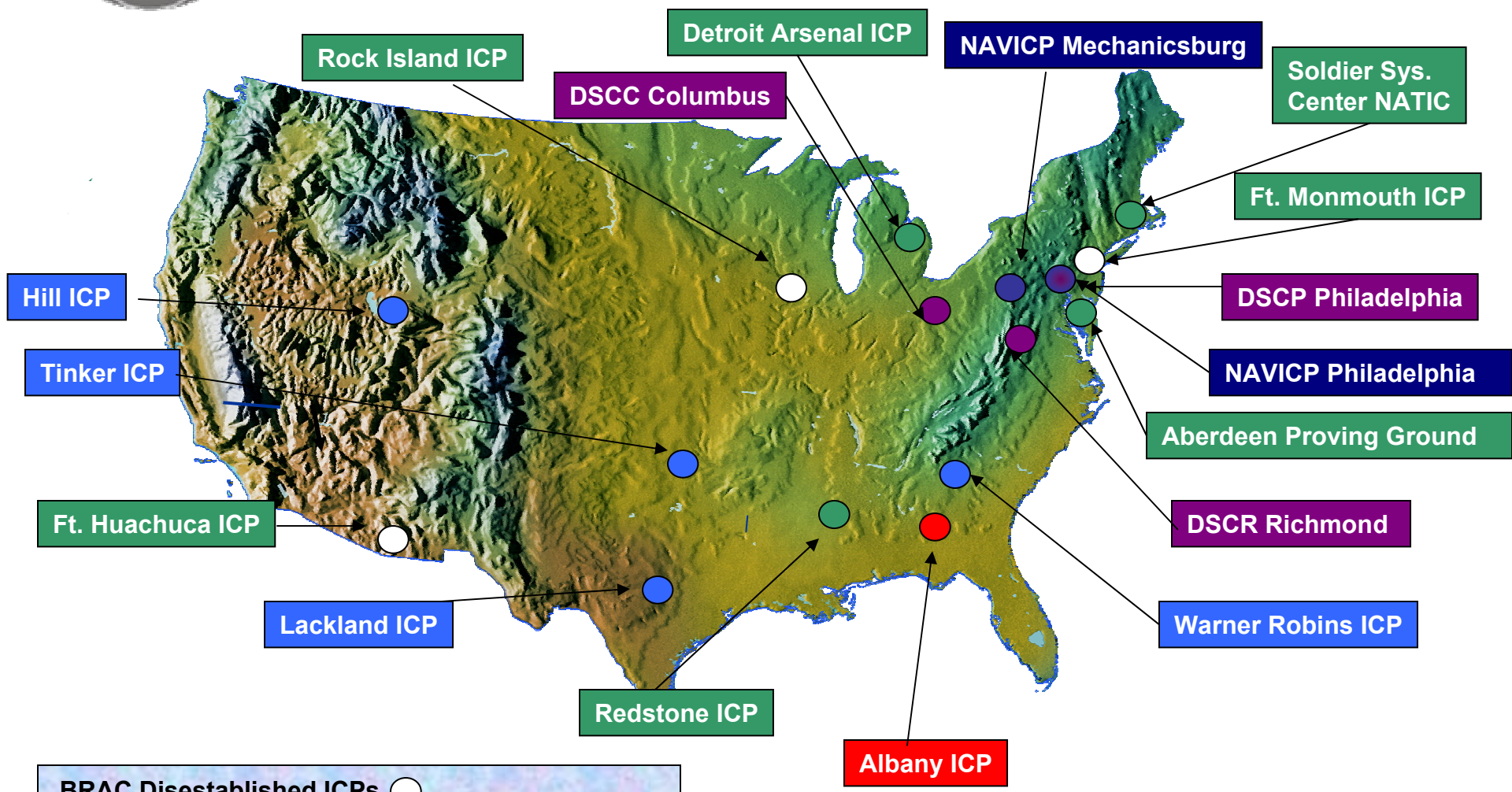
51.2 Million Square Feet

-15.1 M sqft Warehouse Space
-23.3 M Item Cube

36.1 Million Square Feet



DLR Procurement Management Consolidation



BRAC Disestablished ICPs ○

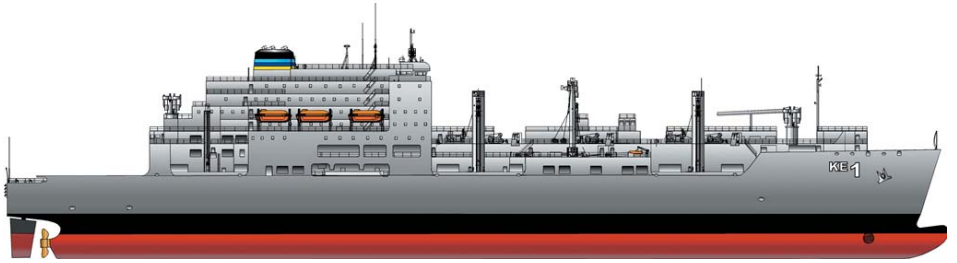
All ICPs except Lackland transfer DLR procurement and almost all consumable management to DLA

Transformational Change
Consolidate Procurement of DLRs

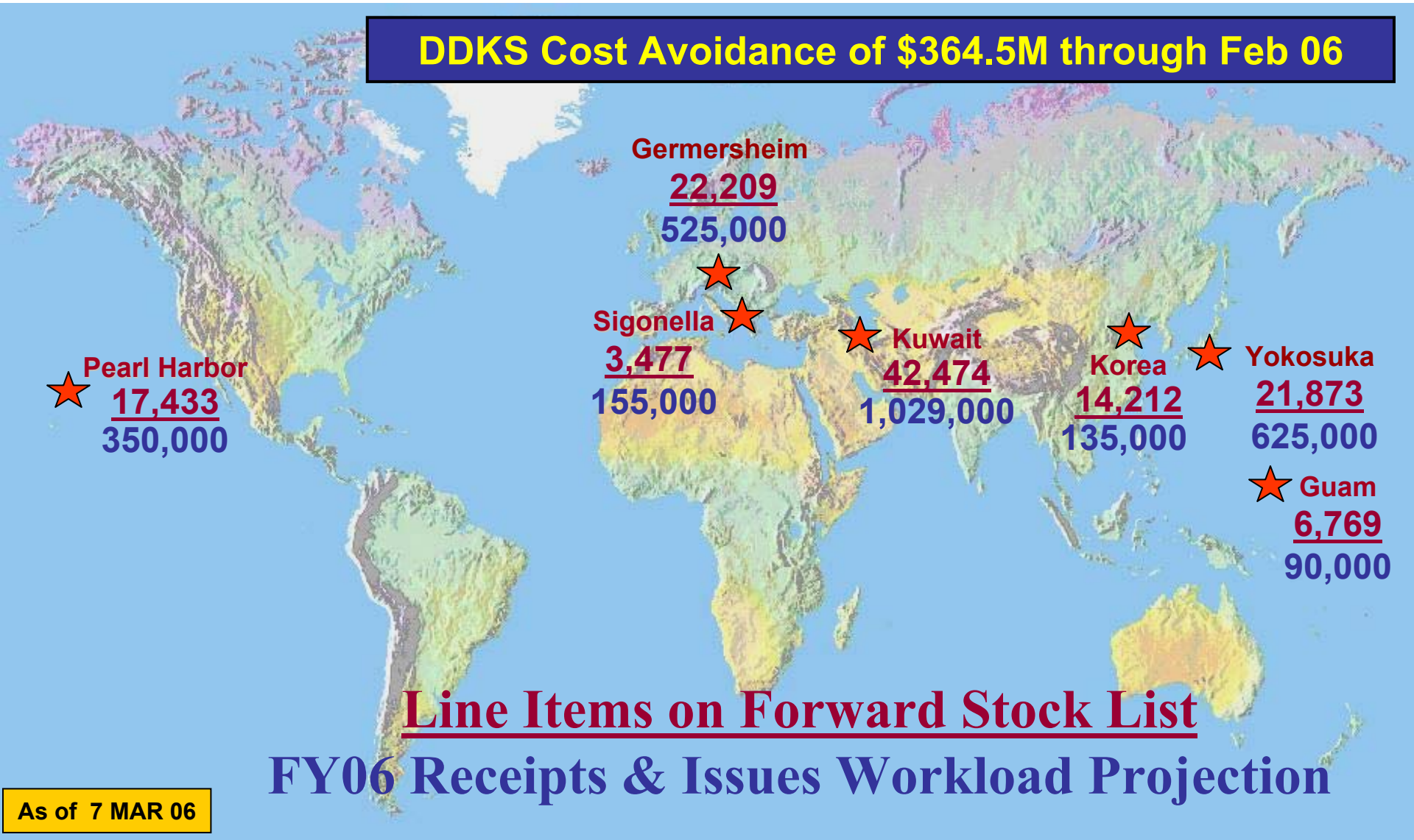
- Disestablishes 3 Service ICPs through consolidation
  - FT Monmouth, Ft Huachuca, Rock Island
  - Establishes Aberdeen as a new ICP site
- Transfers essentially all consumable item management to DLA
- Keeps engineering functions with Services
- Realigns procurement management responsibility of Class IX Depot-level reparables (DLRs) to DLA
- Achieves savings through
  - reduced inventory investment
  - leveraging larger purchases
  - increased use of Performance Based Agreements (PBA)

New Paths to Better Support

- Humanitarian Assistance
- Depot Afloat & Deployable Depot
- Prime Vendor
- Lean Six Sigma
- RFID and other investments in Technology
- Successful ERP in BSM 2.2

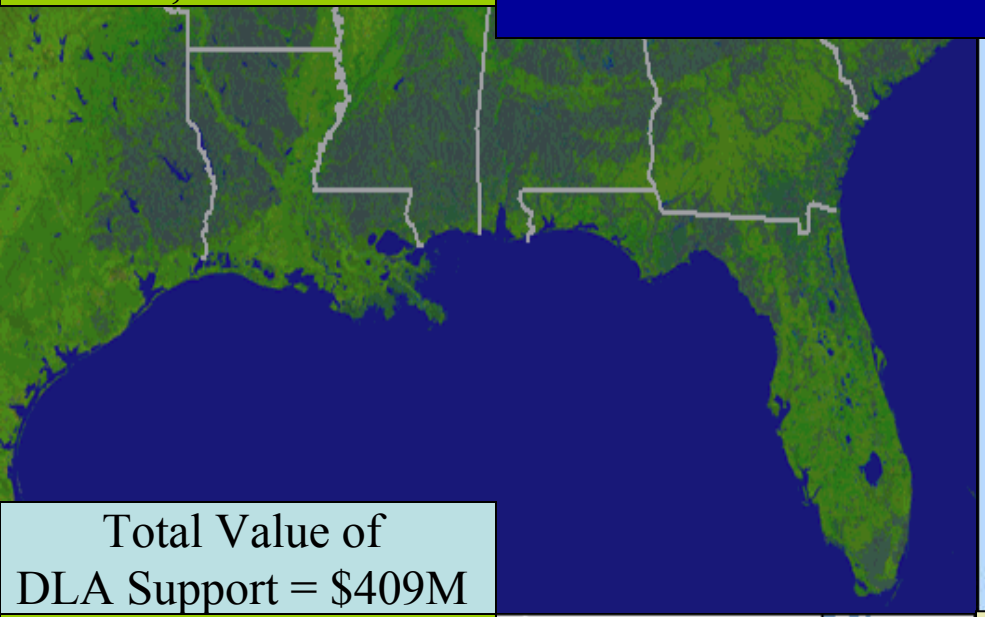


Fixed Based Forward Stocking



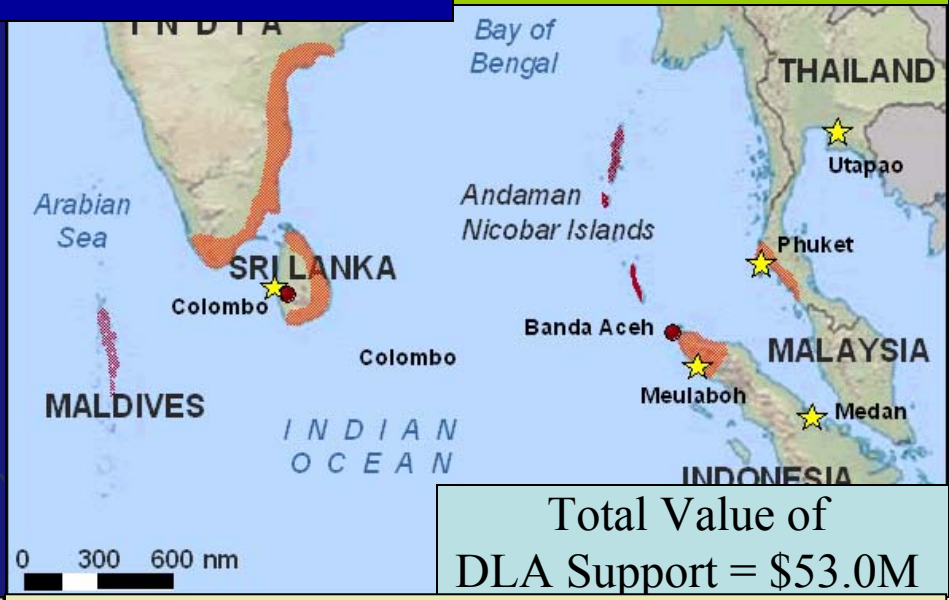
Disaster Relief

Hurricanes Katrina, Rita, and Wilma



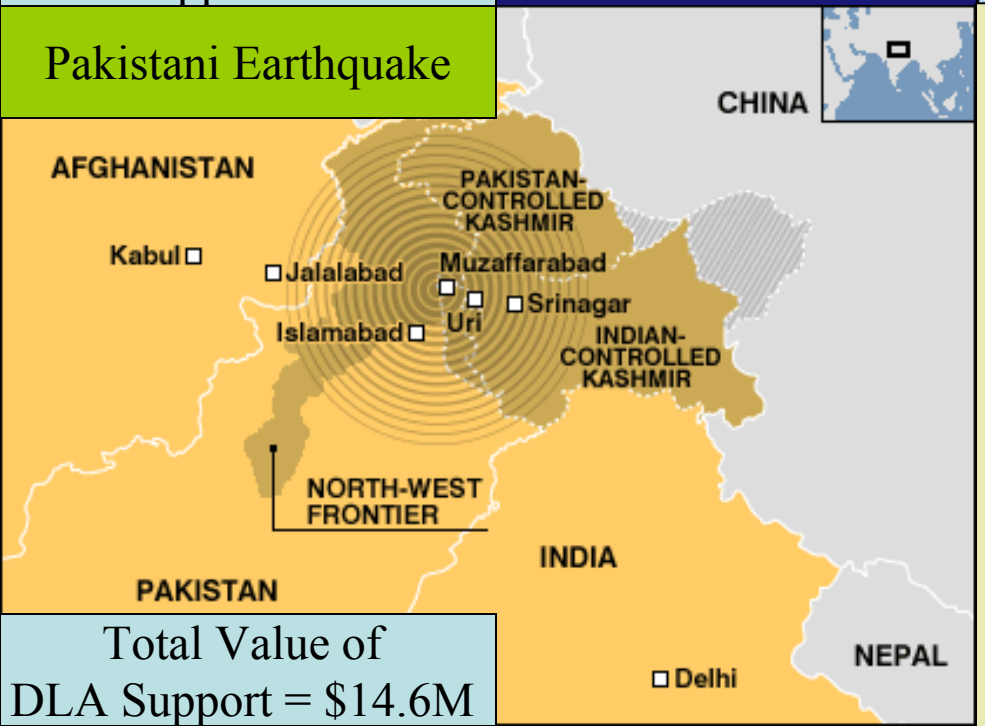
Total Value of DLA Support = $409M

Operation UNIFIED ASSISTANCE



Total Value of DLA Support = $53.0M

Pakistani Earthquake



Total Value of DLA Support = $14.6M

Summary:

$476.6M for disaster relief in 2005, $409M for hurricane support

- **83% Class I Subsistence**
- **5% Class IV Construction**
- **4% Class IIIB POL**
- **4% DRMS**
- **2% Class VIII Medical**
- **1% Class IX** Repair parts
- **1% Class II Individual Equip**

Summary

- Takeaways
  - DLA is focused on improving service and value
  - BRAC has given us enormous opportunities
  - DLA is using/leading best practices
  - DLA is responding to new strategic environment

- Bottom Line: exciting/challenging moment…
  we need your help!

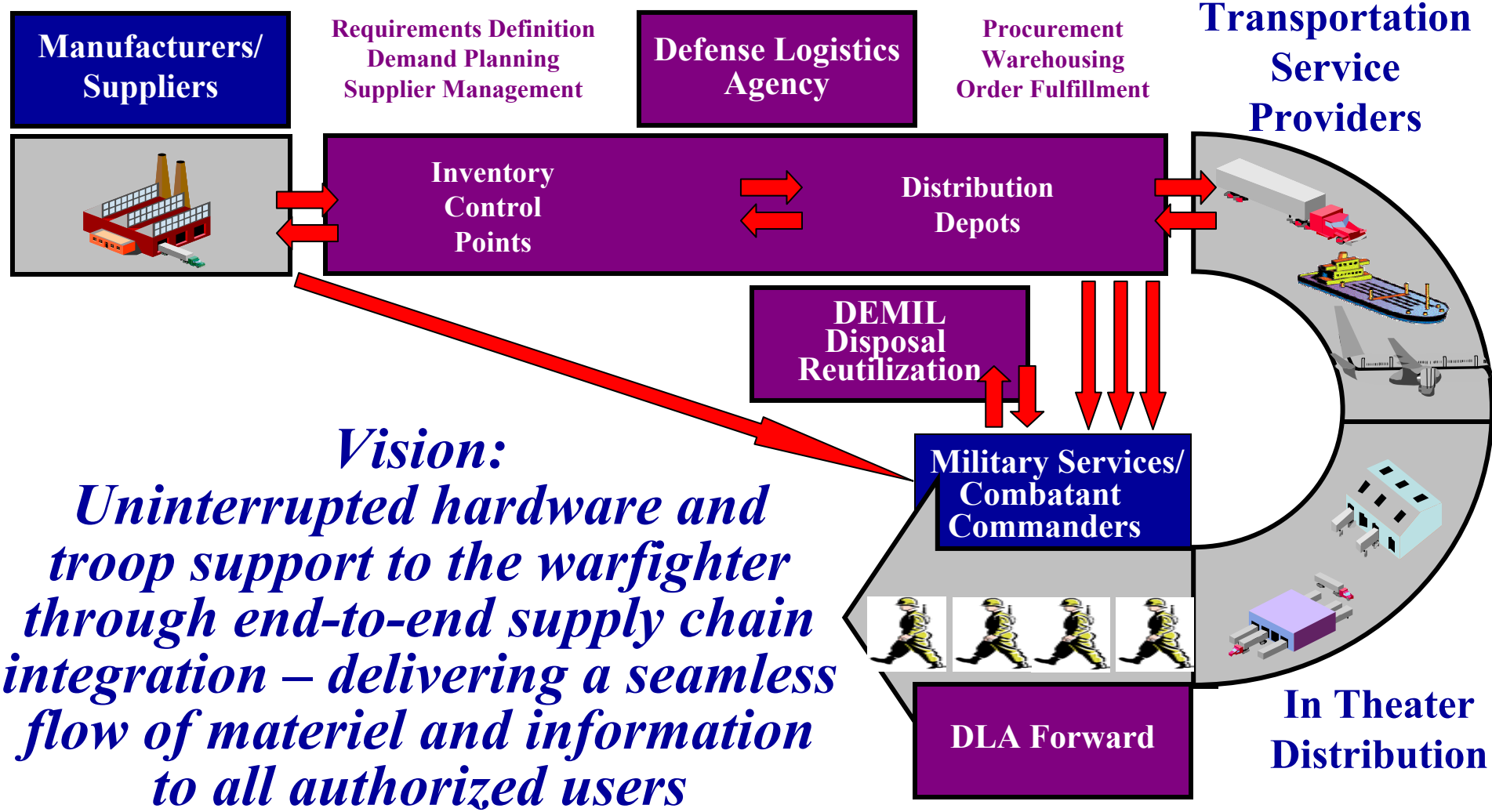
Defense Logistics Agency Response to the New Strategic Environment

- Questions?

Defense Logistics Agency Response to the New Strategic Environment

- Backup

DLA Mission



Vision:
Uninterrupted hardware and troop support to the warfighter through end-to-end supply chain integration – delivering a seamless flow of materiel and information to all authorized users

Global War Fighter Engagement

	NAMs	CAMs	CSRs	LNOs	Planners	DCST	Total
Army	1	2	38	1			42
Marines	1	2	6	1			10
Navy	1	2	26	1			30
Air Force	1	2	20	1			24
						Teams/People	
JCS/Combatant Commanders	3	3	2	14	13	5 / 66	101
Homeland Security	1						1
International Programs	1	3					4
TOTALS	9	14	92	18	13	66	212

CAMs – Customer Account Mangers
CSRs – Customer Support Representatives
DSCT – DLA Support Contingency Team
LNO – Liaison Officer
NAMs – National Account Mangers

Sustaining OIF & OEF

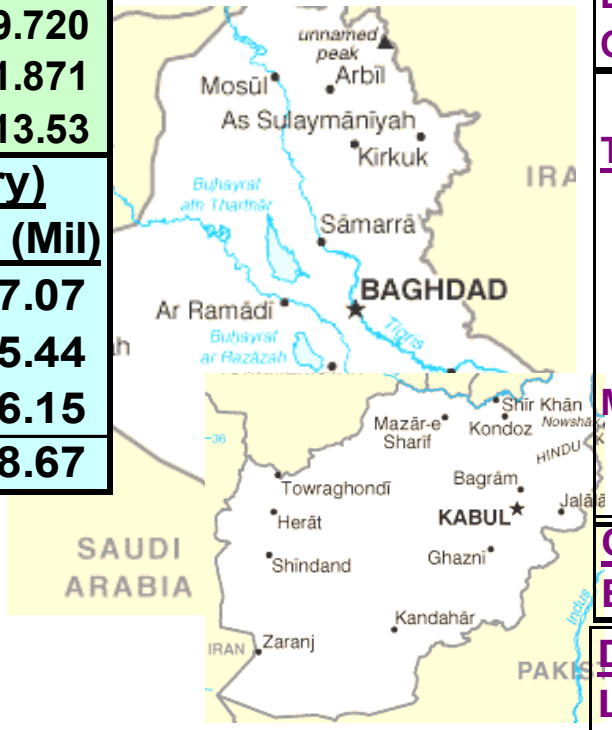
Total Requisitions			
DSC	Cum Reqs		Cost (Bil)
DSCC	4,366,556	$	1.938
DSCP	7,023,222	$	9.720
DSCR	1,357,556	$	1.871
Total	12,747,334	$	13.53

Reconstitution (Summary)			
DSC	Cum Reqs		Cost (Mil)
DSCC	1,085,400	$	267.07
DSCP	1,424,452	$	495.44
DSCR	502,043	$	316.15
Total	3,011,895	$	1,078.67

Humanitarian:	Total
Wheat (mil\lbs):	3.48
HDRs (mil\meals):	5.77
Blankets:	45,467
Dates (lbs):	49,000

Distribution	Total	Recon Total
Materiel Release Orders	10,905,774	3,521,486
Short Tons:	1,117,314	125,523
Value (Billion):	$ 62.03	$ 3.27

(Includes movement of Service owned materiel)



DLA Personnel Deployed	
DCST-KU:	46
DCST-IZ:	33
DCST-AF:	14
Other:	57

	OIF & OEF Total	
Troop Support:	Count	Cost (mil)
Cold Weather:	-	$ 434.40
Cots:	1,078,040	$ 76.60
GP Med Tent:	644	$ 1.60
GP Large Tent:	919	$ 3.46
Mod Tent System		
Green:	6,338	$ 49.50
Tan:	2,653	$ 22.70

CLASS III (Bulk)	Total
Bil of USG:	5.048

DRMS	Total
Line Items	43,035
Value (mil)	$ 240.33

OPRATS:	Total
MRE's (mil\meals)	110.50
UGR H&S (mil\meal	34.53
UGR A's (mil\meals)	91.85

Unique Challenges in OEF

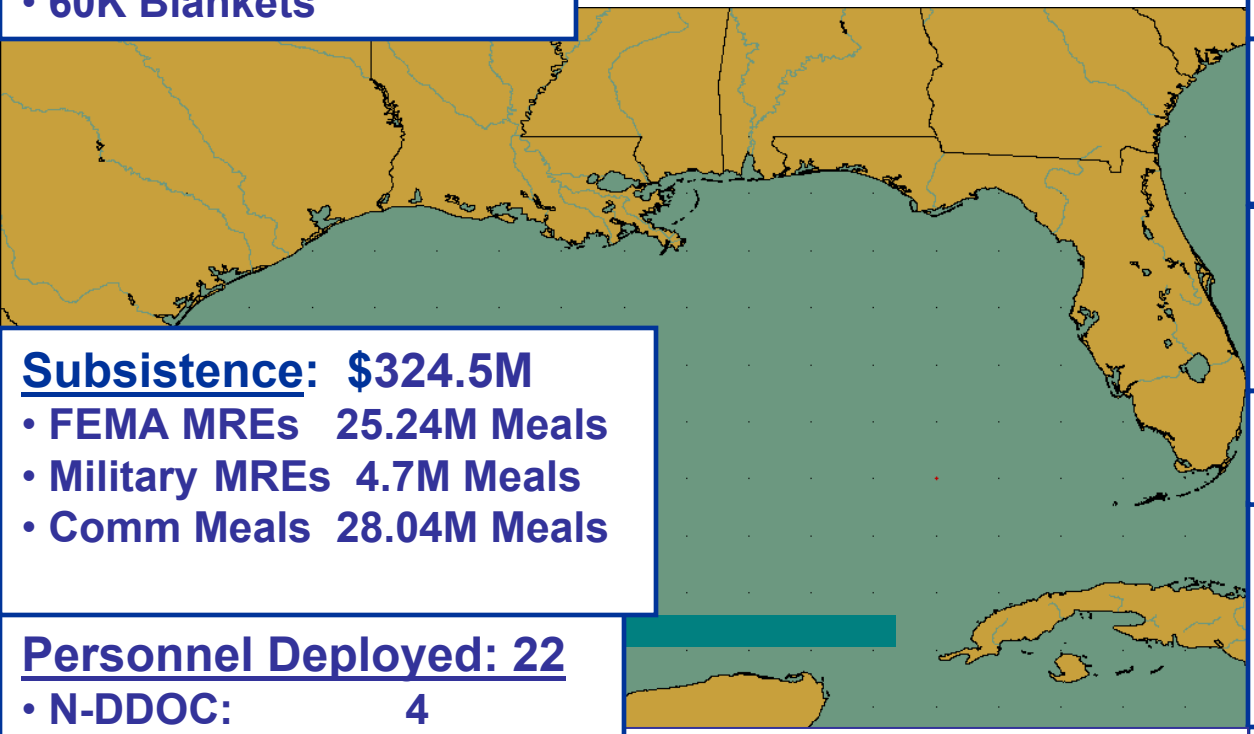
- Russian Red Wheat
  - Requirements Challenge: Refugees use wheat in local meals. Determining the type of wheat they would use was a challenge as there are hundreds of types of wheat including 7 different types of Russian Red, after much discussion any type of Russian Red Worked
  - They wanted 40lb burlap bags…industry only made 100lb bags. Settled on 60lb plastic bags
- Horse Saddles
  - Had to be English vice Western Style. We had to find a local source that made the type of style they preferred
- Holiday Meals for Afghanistan Refugees
  - In Preparation for a Religious Holiday we thought it would be a good idea to provide Dates. This simple offer became very difficult as we struggled with how the dates would be packaged, and what was acceptable. California Date growers wanted their logo on the packaging.
- Color of Humanitarian Daily Rations
  - Originally the rations were bright yellow, but had to be changed to Salmon so they would not be confused with the Anti-Personnel Cluster Bombs
- Halal Meals
  - Muslim Meals Originally Designed for Guantanamo Detainees, also used in Afghanistan

Support to Hurricane Relief

Final
27 Feb 06

Total Value of DLA Support = $409M

FEMA Requisitions
- 50K Cots
- 15K H&C Packs
- 60K Blankets



Distribution of Water:
2.2M Units (~ 1.5M liters)

CLASS III Fuels: $17.0M
- DoD: 7,500 gals
- FEMA/Govt: 4.5M Gallons

CLASS VIII Medical: $8.9M
- 2238 lines for USNS Comfort
- $3.5M Materiel to McGee, MS

CLASS IX Parts: $5.5M
- 16.1K Requisitions

Reutilization: $22.5M
- Bedding: For 1100 People
- 34 Generators: $1.7M
- 966 Requisitions:

Subsistence: $324.5M
- FEMA MREs 25.24M Meals
- Military MREs 4.7M Meals
- Comm Meals 28.04M Meals

Personnel Deployed: 22

• N-DDOC:	4
•JTF-Katrina	9
•JTF-Rita	1
•NORTHCOM	7
• FEMA	1

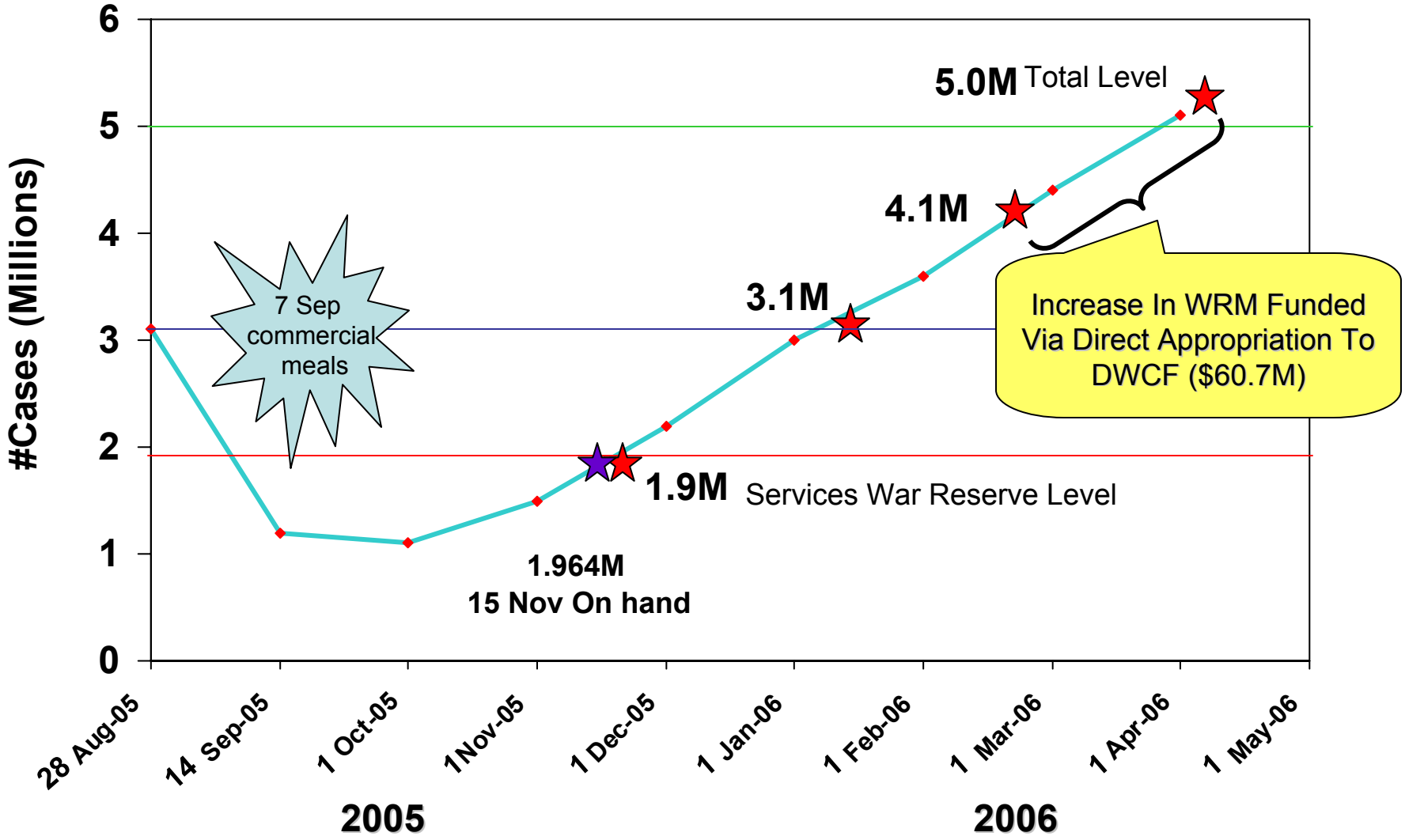
CLASS IV: $31.0M

DAPS: Forms, Flyers
405K Copies

DLA Distribution from:
- 25 of 26 DLA Depots

Maps: 56,906 Sheets

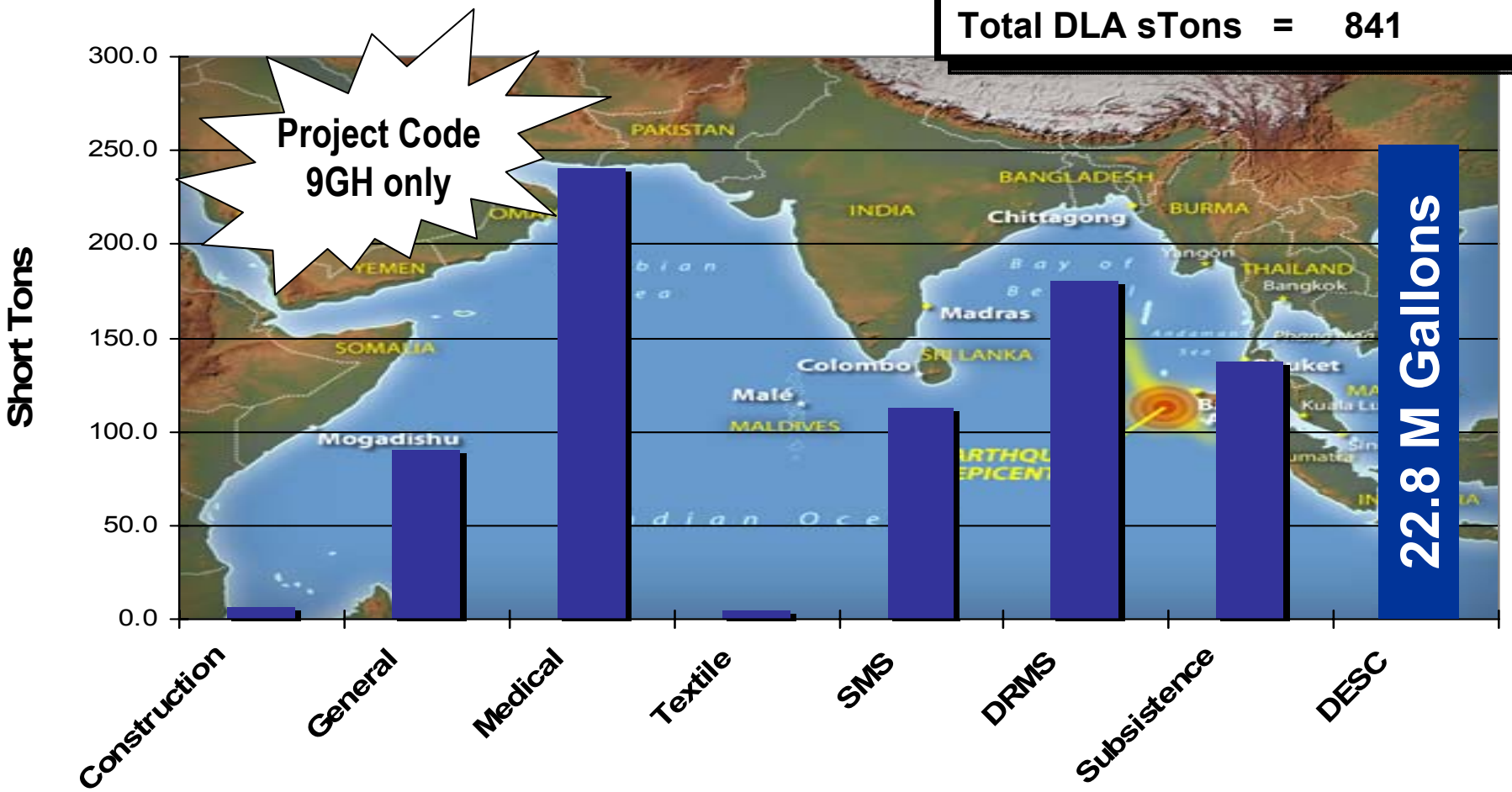
MRE Inventory Schedule



DLA TSUNAMI Support
27 Dec 04 – 15 Feb 05

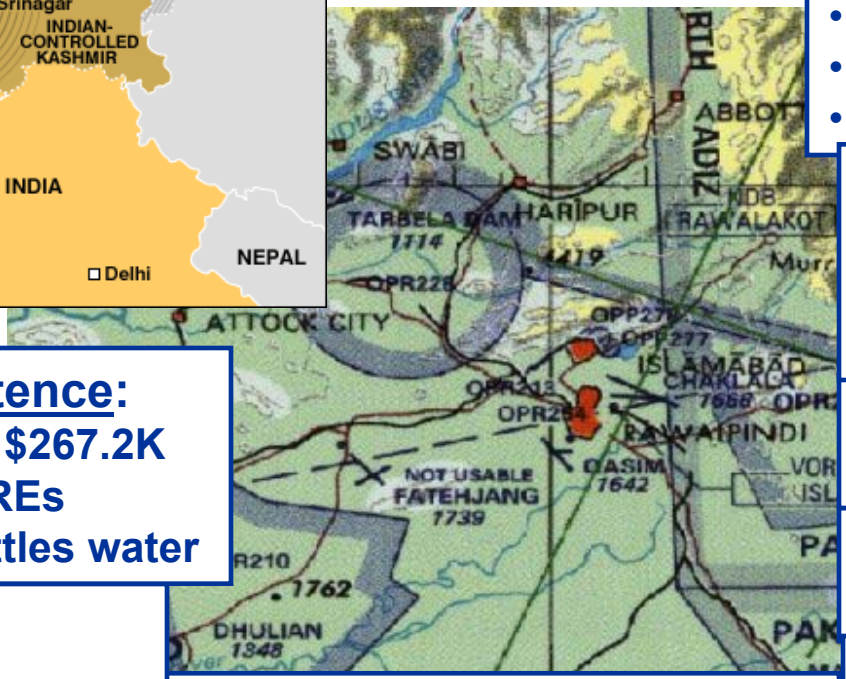
Total DLA Reqs	=	8,789
Total Dollar Value	=	$53.0 M
Total DLA sTons	=	841

Total Rollup in sTONS



Kashmir Earthquake Relief

Chaklala PAF Islamabad, Pakistan



CLASS I Subsistence:
- Troop Support -- $267.2K
  - 3,072 Cases MREs
  - 5,400 (1.5L) bottles water

Personnel Deployed In the Vicinity:
- C-DDOC: 6 (1 in Pakistan)
- DCST-KU: 11
- DCST-AF: 9
- DLA-CENTRAL FWD: 2

DSCA Requisition:
- Tents: Qty 1300 - $3.8M
- Blankets: Qty 200K - $6.05M
- Space Heaters: Qty 600 – 355.3K

CLASS II Clothing & Textiles:
- Insect Nets: Qty 300 - $8.6K
- Bed nets: Qty 771 - $58.4K
- Tents: Qty 60 - $644.2K
- Clothing: 85 Docs - $37.6K

CLASS III Fuel:
- Bulk - DESC Into-plane Contracts in Pakistan
- Pkg POL: 7 NSNs - $3.2K

CLASS VIII Medical:
- 5 NSNs; 6 Docs; $1.6K

CLASS IX Parts:
- 130 Docs; $71.9K

DRMS Materiel: Value $3,261K
- DSCA HAP - Blankets, Tents, Sleeping Bags, Medical Material
- CFLCC Blankets, Tents, Cots

Australian Defence Force

***Presentation to*:**
National Defence Industrial Association

Air Commodore Margaret Staib
Director General Strategic Logistics

Australian Government
Department of Defence
Defence Materiel Organisation

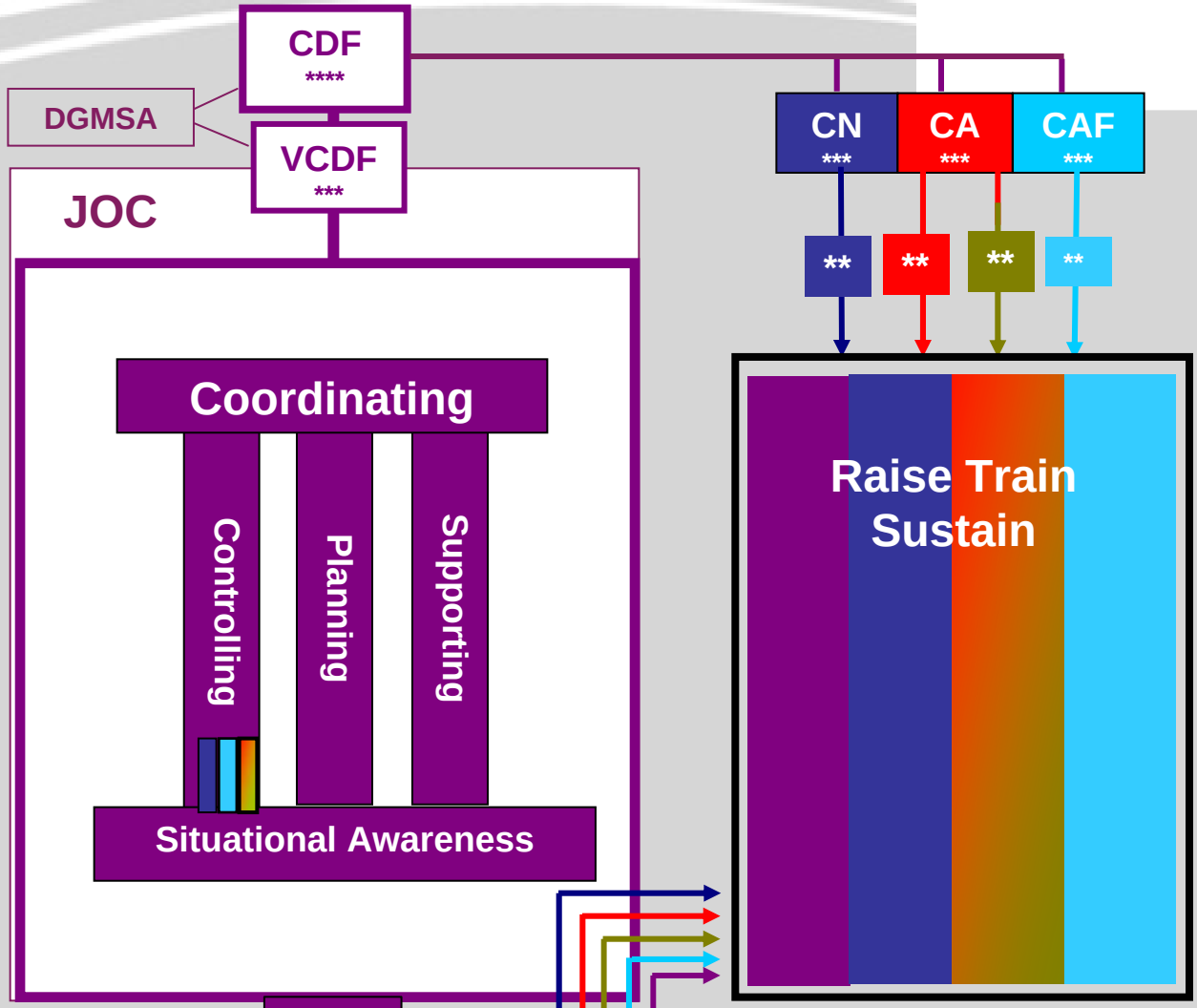
ADF Logistics Transformation

- Organisational transformation
- Major logistics asset transformation
- Information systems transformation

The New ADF Higher C2 Arrangements

Australian Government
Department of Defence
Defence Materiel Organisation

- ✓Unity of command
- ✓Separate RTS
- ✓Unity of control
- ✓Clarity
- ✓Joint effects
- ✓Integrated
- ✓Efficient <750
- ✓Responsive
- ✓Flexible and adaptive
- ✓Monitoring RTS



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Defence Materiel Organisation

CDF

DGMSA

VCDF

HQJOC
(673)

DCJOPS

DCOORD

DG INT

DG OPS

DG PLANS

DG SPT

DGAIR

DAirOps

DOpsPlans 1

DOpsPlans 2

DIntOps

JCCentre

DMar Ops

DSub ops

DSO Ops

DStratPlans

DOpPlans

DIntPlans

DJE

DJC

COS JFHQ(D)

DINT (D)

DUNE

DPers

DLog

DEMSOps

DLegal

DPA

DHlth

DFIN

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Department of Defence
Defence Materiel Organisation

Formation of the Joint Logistics Group

- Commander Joint Operations able to focus on operations
- More effective delivery of operational logistics
- Better arrangements for strategic logistics
- Effective interface with the Defence Materiel Organisation as a Prescribed Agency
- Optimal arrangements to manage logistics across Defence
- Effective accountability for assets
- Strategic J4 role clearly established

A Pragmatic Way Ahead!

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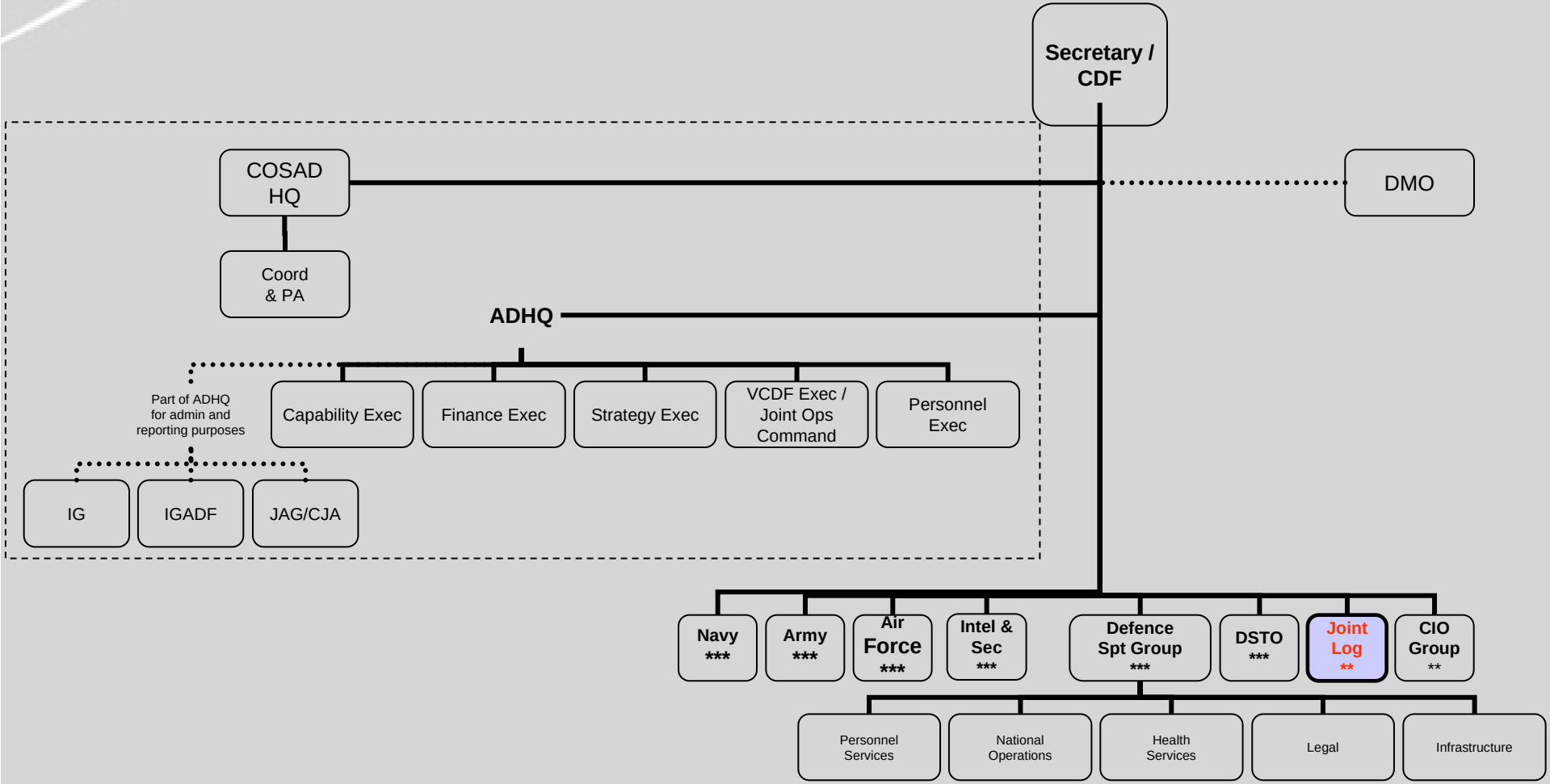
Department of Defence
Defence Materiel Organisation

AUSTRALIAN DEFENCE STRUCTURE



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Department of Defence
Defence Materiel Organisation

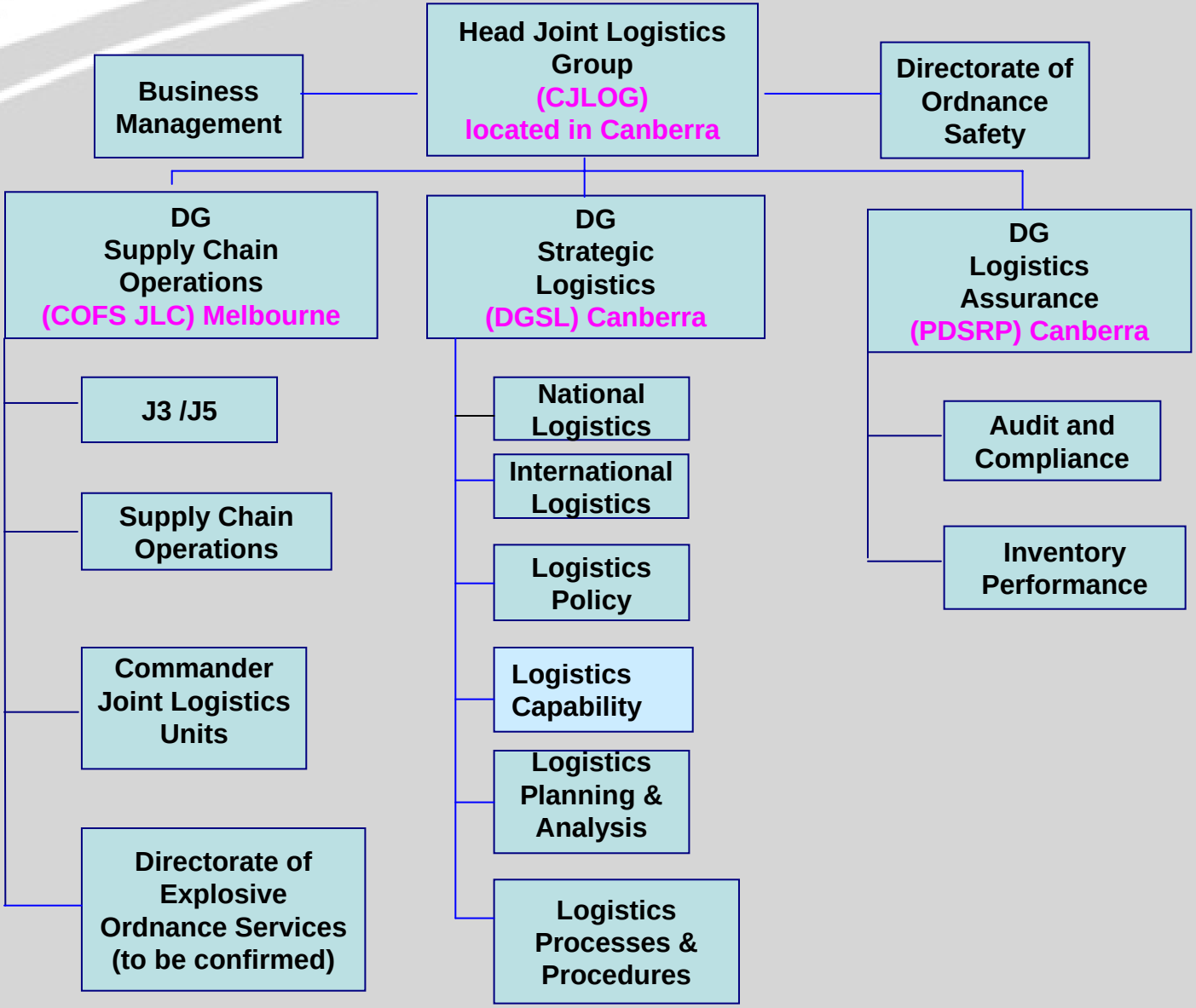
Formation of the Joint Logistics Group

Key Points:

- Elevation of Joint Logistics to Group status
- Headed by ** Located in Canberra
- Invited member to the Defence Committee
- Defence Logistics Board to become a Defence Logistics Committee
- Creation of a new Branch for Logistics Assurance

Australian Government
Department of Defence
Defence Materiel Organisation

Joint Logistics Group



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Defence Materiel Organisation

Strategic Airlift

- Project Air 8000
- $2.1bn
- 4 C17 to commence delivery Dec 06 final delivered Jun 08
- Responsive Global Airlift
- 4 x lift capacity of current C130

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Department of Defence
Defence Materiel Organisation

Strategic Sealift

- Joint Project 2048
- Enhance the ADF's capability to deploy and sustain operations by sea
- Multi million dollar, multi phase project
- 2007-2017

Australian Government
Department of Defence
Defence Materiel Organisation

Logistic Information Systems

- Joint Project 2077 Military Integrated Logistic Information System (MILIS)
- Multi phase multi million dollar project aimed to:
  - Improve Logistics capabilities in the areas of supply, movement and transport and materiel engineering and maintenance, deployability and responsiveness.
  - Improve standardisation of business processes across the Services.
  - Provide a streamlined systems environment resulting in lower complexity, operating costs and improved responsiveness to change.

Australian Government
Department of Defence
Defence Materiel Organisation

JP 2077 Phase 2B

- ERP core system upgrade to MINCOM Ellipse
- Improved financials package
  - enhance connectivity with Defence's Financial ERP
- Deployable Logistics capability
  - Allows for continuing support when communications with mainframe is interrupted
- Integrated In-transit Visibility System
  - Enhance ability to track consignments through supply chain

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Department of Defence
Defence Materiel Organisation

Joint Theatre Distribution System

- System of networks:
  - Physical, Information and Control
- Current focus is on Physical system
  - Material handling equipment, integrated load handling equipment for land vehicles, modular load systems (containers and pallets)
- Project will introduce capabilities from 2008-2011

Australian Government
Department of Defence
Defence Materiel Organisation

Automatic Identification Technologies

- Policy released in 2005
- Incremental approach focusing on areas that already have an identified capability gap
  - In transit visibility
- Uses limited by our imagination
  - Personnel tracking
  - Stock control
  - Management information

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Department of Defence
Defence Materiel Organisation

Radio Frequency Identification

- Contract signed with SAVI Technologies to provide the ADF with active RFID tags.
- Rollout commencing in May this year starting with deployed forces in Iraq.
- Aim to have a completely enabled ADF supply chain.

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Department of Defence
Defence Materiel Organisation

Asset Visibility

- ITV/RFID

Australian Defence Force

***Presentation to*:**

National Defence Industrial Association

Air Commodore Margaret Staib
Director General Strategic Logistics

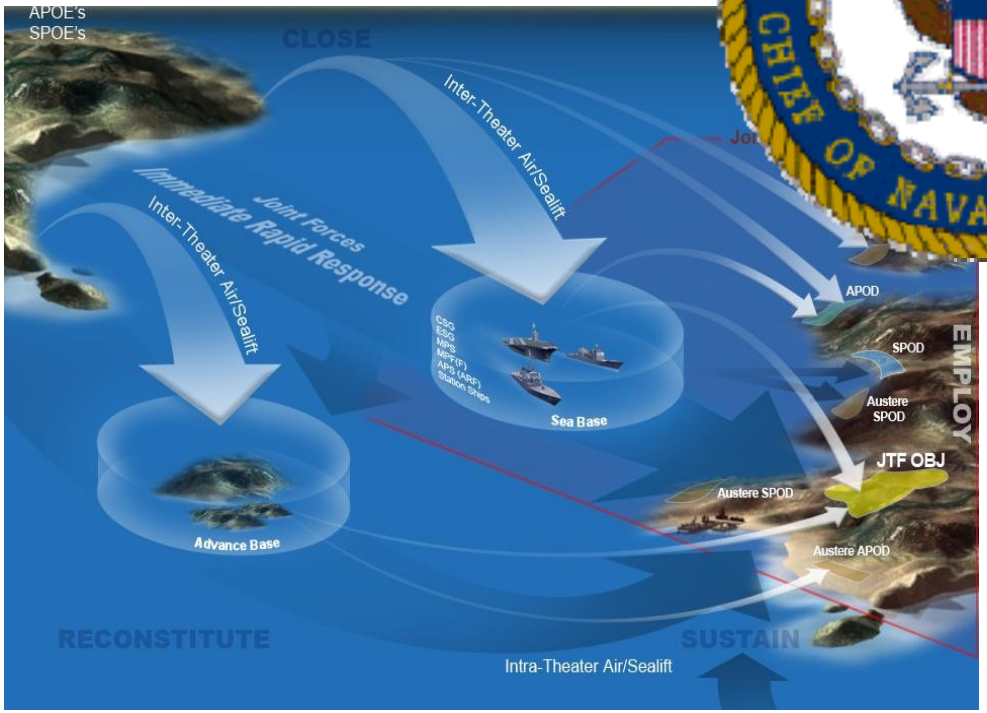
Back up

Australian Government
Department of Defence
Defence Materiel Organisation

Future Joint Logistics Concept 2025

- Relates to the current procurement priorities
- Focus:
  - Distribution based
  - Networked (control, information & physical networks)
- Recognises need to undergo ***revolutionary*** rather than ***evolutionary*** change
- Major issue: cultural change within Defence

Dynamic Logistics to Meet Evolving Threats



NDIA Conference
19 April 2006

Presented by
RADM Alan S. Thompson, SC, USN
Director, Supply, Ordnance & Logistics Operations

Outline

- Evolution of Maritime Logistics from independence towards interdependence
- Operational Integration (Unity of Effort)
  - Joint Theater Logistics
  - Seabasing
- Industrial (Supply Chain) Integration
  - PBL

Joint Maritime Logistics Framework

- Maritime Logistics...Historical Context
  - Logistics support focused on afloat forces
  - Material flow enabled with dedicated lift
  - Independent of other services
- Changing Maritime Domain
  - Littoral operational context
  - Seabasing implications
- Future Maritime Logistics Framework
  - Integrated joint component
  - Developing Joint Concept

Responding to a new threat environment

Joint Theater Logistics Management Concept

Growing Joint Connectivity

JFACC

AIR

JFMCC

MLC

(CTF-X3)

JFLCC

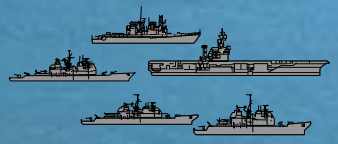
TSC

- Maritime Distribution
- Supply
- Maintenance
- Contracting
- POL
- Ordnance
- JRSO&I

Integration of Joint / Coalition Capabilities

- Land Distribution
- Supply
- Maintenance
- Contracting
- POL
- Ordnance
- JRSO&I

COALITION



TRANSCOM

DLA

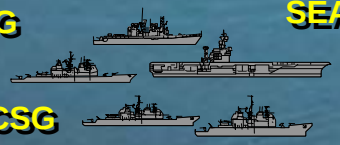
JDDOC

JDDE

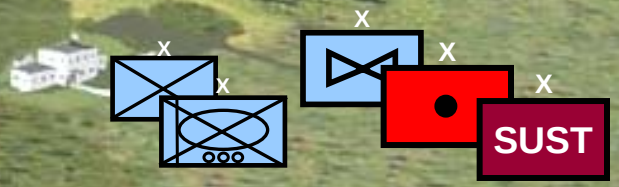
ESG

SEABASE

CSG



MARITIME COMPONENTS



LAND COMPONENTS

MLC = Maritime Logistics Command (notional name)

Joint Seabasing

Speed, Access and Persistence

Using these principles

The sea as maneuver space…

Leverage forward presence…

Expand access options

… reduce dependence on land bases

Create uncertainty…

Protect joint forces…

Scalable, responsive joint power projection…

Sustain joint force operations…

Seabasing will be

Interoperable and interdependent

Fires – NSFS, Aviation, Bombers

Maneuver - Connectors

Sustainment – Timely, efficient

C4ISR – Common Operating Picture

Force Protection – Air, Sea and Land

…and will allow us to pursue these lines of operation

Close:	Within 10-14 days
Assemble:	At sea within 72 hours of arrival
Employ:	One Brigade within 8-10 hrs
Sustain:	Up to two joint brigades
Reconstitute:	For follow-on operations

Supply Chain Integration

- Supply Chain “Integration” enables Joint effects
  - Transforming expectations

    “Less inventory ⟷ Performance Based Logistics”
  - Cooperative Logistics Arrangements (with Repairable Item Replacement) remains accessible to “core” supply chain
  - Non-Standard Procurement

PBL "Partnerships" with Industry

Performance Based Logistics (PBLs) ... Leveraging Industry Partners

System	PBL Benefits
Auxiliary Power Unit:	*BBs down from 125 to 0 ... 18 reliability improvements incorporated*
Aviation Tires:	*Wholesale inventory down, 50,000 to under 5,000 (DLA storage savings) ... retail inventory reduced*
AEGIS:	*BBs down from 155 to 6*
F/A-18 Stores Mgmt Sys:	*Customer Wait Time down, 47 days to 7 ... NAS Lemoore SHORCAL reduced by 30%*
CIWS:	*BBs down from 200 to 3 … $11.5M retail inventory reduction through FY13*
F404 Components:	*BBs down from 710 to 0*
ALR-67V3:	*Increased reliability by 76%, MTBF was 300 … today 527*

SECDEF 2005 Winner

Model for BRAC

SECDEF 2005 Winner

"PBLs ... The Pentagon is Buying Smart " ... Aviation Week and Space Technology 10/31/05

Additional Opportunities

- **Need to explore partnerships to achieve broader savings**
- **Current Candidates include:**
  - **H-53 and KC-135 APUs - Air Force / Navy**
  - **APX-118 IFF System - Army / Navy**
  - **V-22 - Air Force / Navy**
  - **Joint Helmet (JHMCS) - Air Force / Navy**
  - **CIWS - Army / Navy**

Summary

- Evolving Environment...evolving threats
  - From independence to interdependence
- Joint Theater Logistics strengthens unity of effort
- Seabasing is about Joint integration
- PBL's: Partnerships for efficiency and effectiveness

Sustainment Science & Technology Panel

National Defense Industrial Association
22nd Annual
National Logistics Conference
April 18, 2006

Lenn Vincent

Panel Members

Panel Co-chairs:

- RADM Lenn Vincent, USN (Ret.) Defense Acquisition University, Industry Chair
- Joe Grosson, Managing Director, Enterprise Logistics Technology Office, Lockheed Martin

Speakers:

- Dr. Piero P. Bonissone, GE Global Research Center
- Dr. Robert M. Cranwell, Sandia National Laboratories
- MGEN Dennis Jackson, USA (Ret.) Oak Ridge National Laboratory

Developing the next generation Logisticians

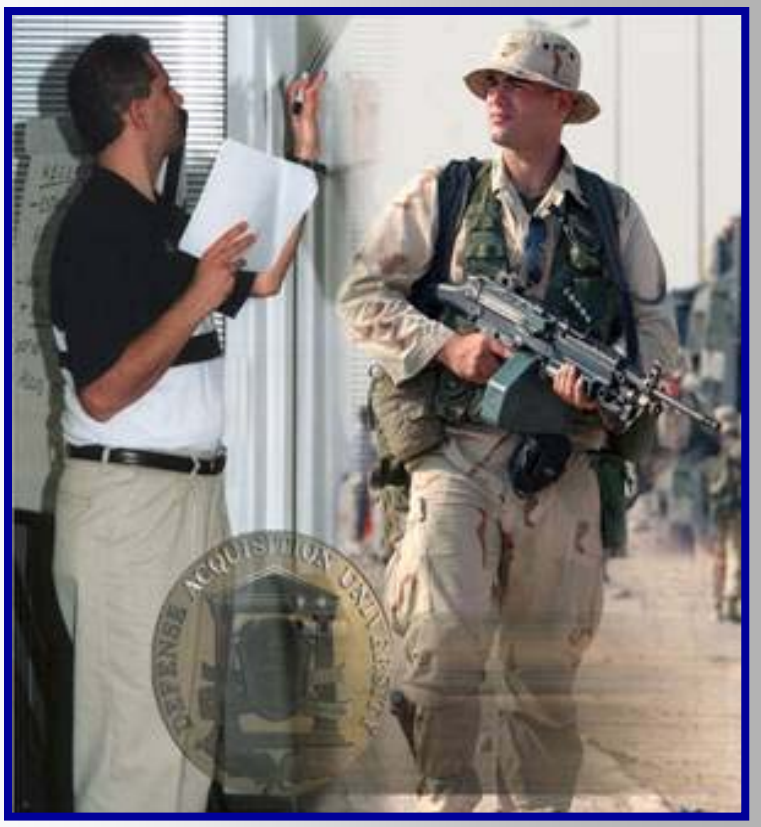
The 21st Century Demands Uniquely-Skilled People

- Value of education increases during times of change
- Challenges and opportunities reside at the intersection of business and technology
- Curricula must transform to reflect the realities of today and tomorrow
- World economy demands broad awareness of diverse cultural, political, religious, & business issues

DAU Mission

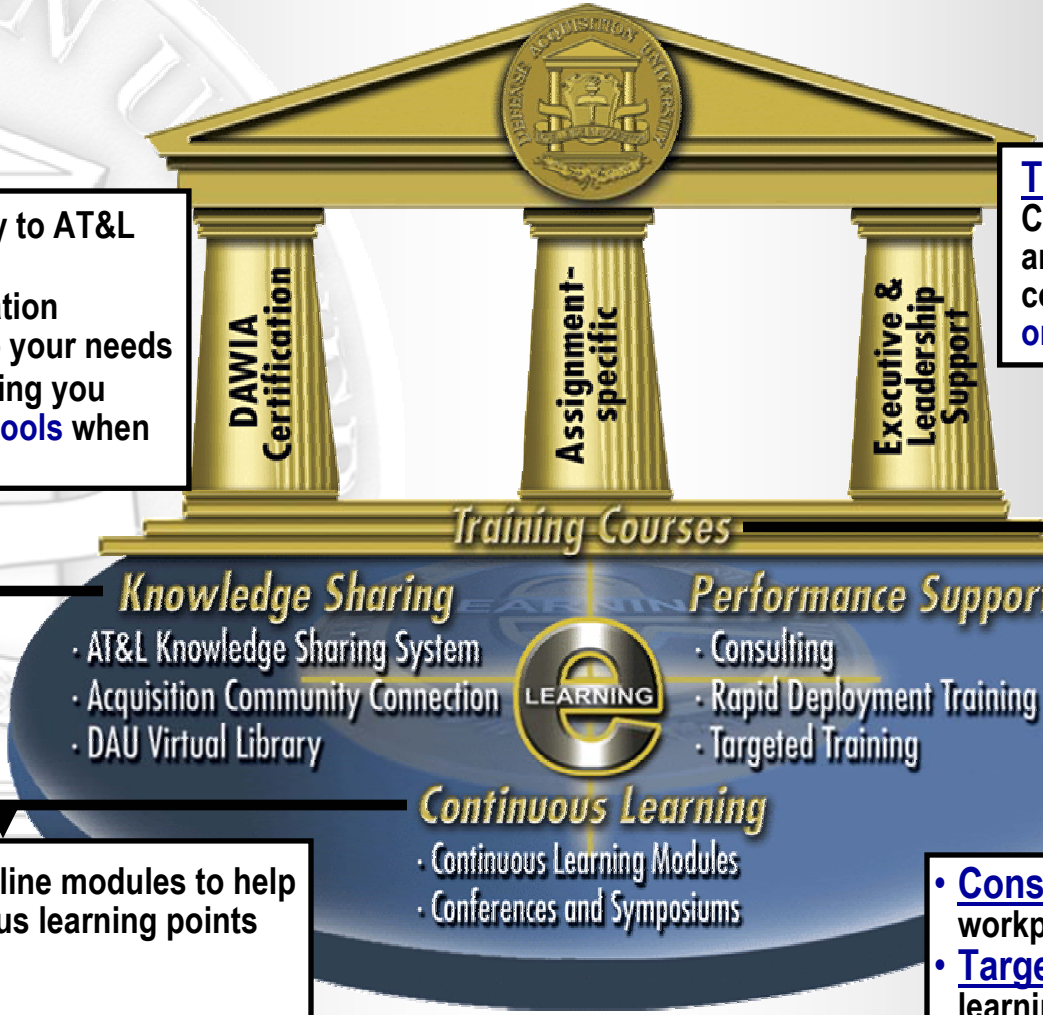
Provide practitioner training to enable the Acquisition, Technology & Logistics community to make smart business decisions and deliver timely and affordable capabilities to the warfighter.

- ✓Created by legislation (1990)
- ✓5 major campuses across U.S.
- ✓544 faculty & staff (111 military)



DAU Performance Learning Model

24/7 Learning Assets for the Classroom and the Workplace



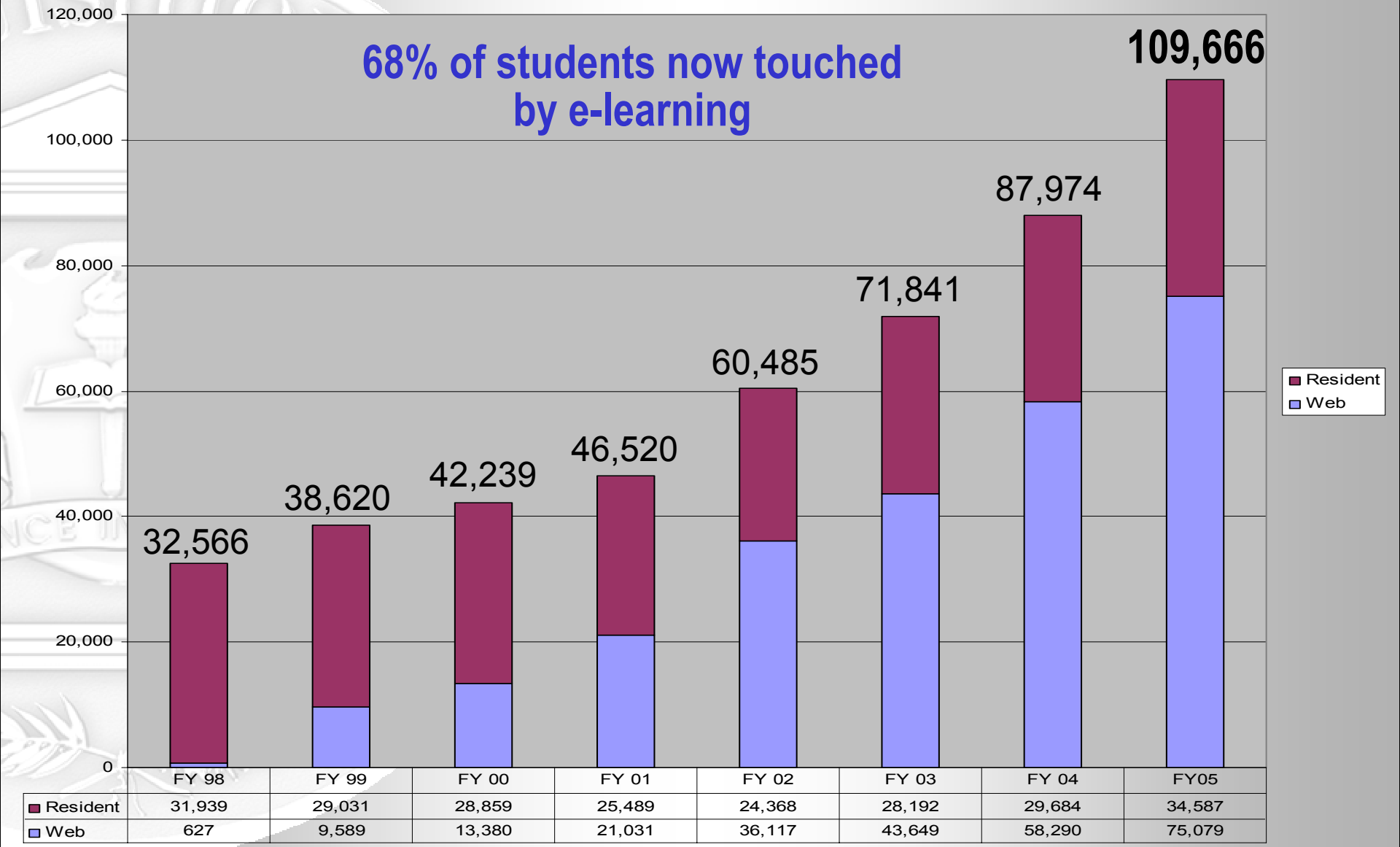
- **AKSS** - Online gateway to AT&L information & tools
- **ACC** - Online collaboration communities tailored to your needs
- **Virtual Library** - Keeping you connected to research tools when you are not on campus

Training Courses - DAWIA Certification, assignment-specific, and executive & leadership courses – in the classroom and online

- **CL Modules** - Online modules to help you earn continuous learning points
- **Conferences**
  - PEO / SYSCOM
  - Business Manager
  - DAU Alumni Association

- **Consulting** - We come to your workplace to assist you
- **Targeted Training** - Tailored learning for your organization
- **RDT** - On-site and online training on the latest AT&L policies

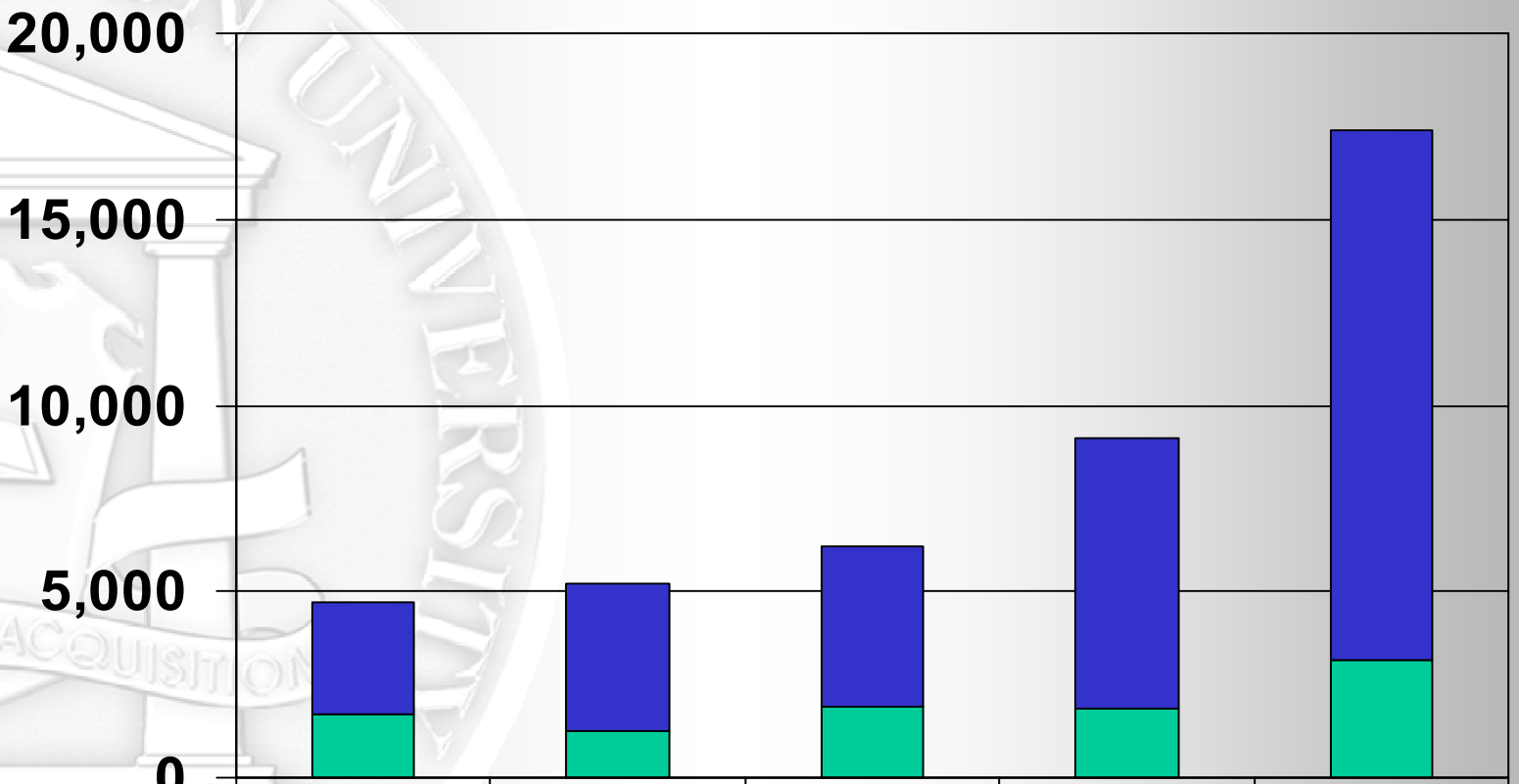
Reaching More of the Workforce Than Ever Before



	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY05
Resident	31,939	29,031	28,859	25,489	24,368	28,192	29,684	34,587
Web	627	9,589	13,380	21,031	36,117	43,649	58,290	75,079

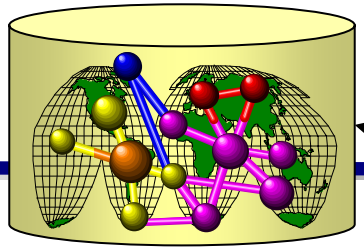
Total Logistics Course Grads

FY 2001- 2005



	2001	2002	2003	2004	2005
Web Grads	3,028	3,977	4,283	7,242	14,223
Classroom Grads	1,694	1,238	1,908	1,878	3,152
Total	4,722	5,215	6,191	9,120	17,375

Sense & Respond Logistics
Adaptive, Knowledge Enabled



GIG

Critical asset visibility

Interoperable joint communications to the tactical level

S&R knowledge-based environment

Rapid configuration, re-configuration, and delivery of mission-ready capabilities

Dynamically managed inventory of capabilities

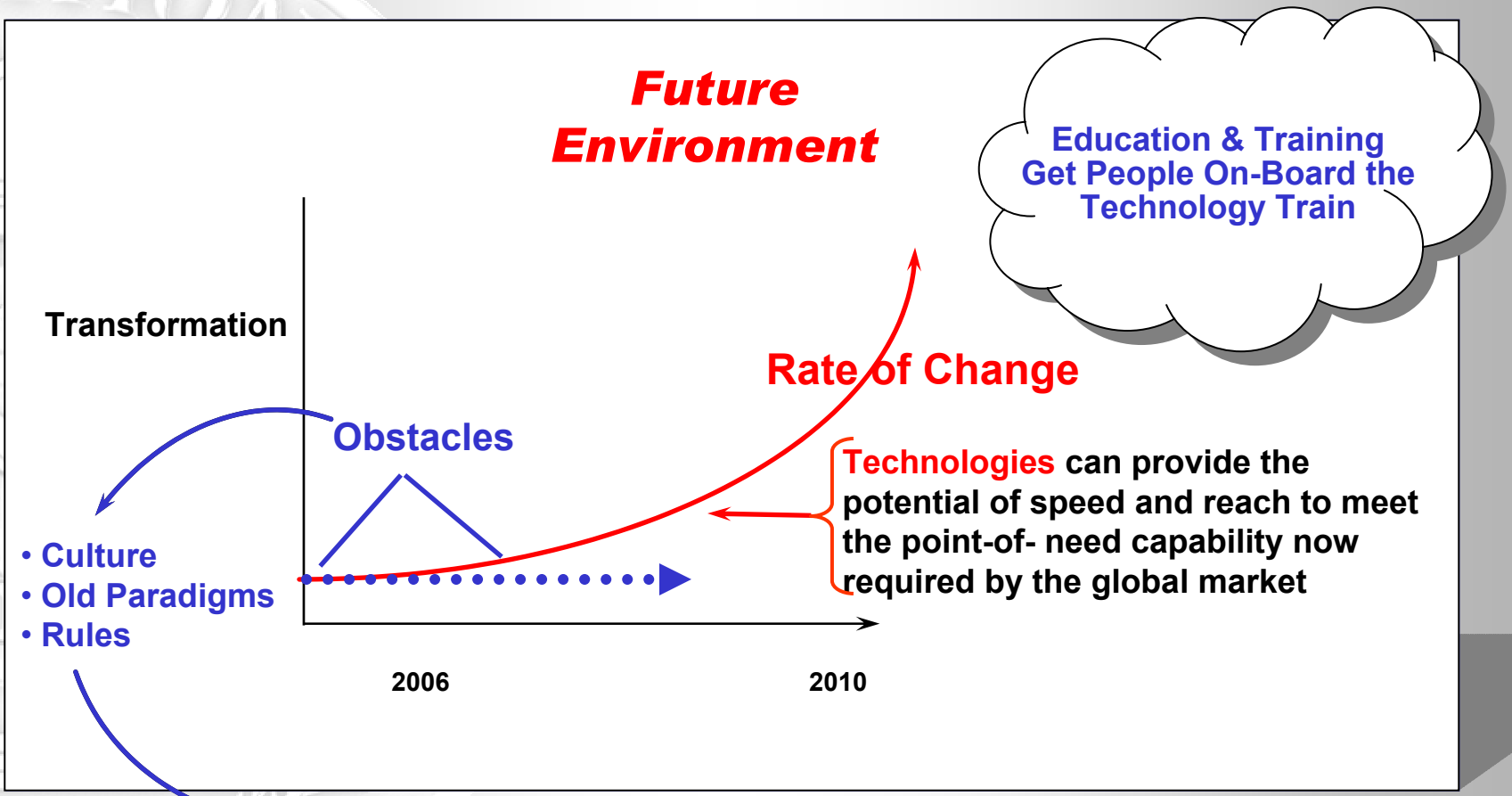
Major DAU Research Emphasis

Cross-service, cross-organizational

Uses transparency, transportation flexibility and robust IT to leverage uncertainty and manage risk

Prime metric: Speed/quality of effects

Barriers to Change…*Are Not Technology*



***People** -- Keep the Transformation curve flat by holding tightly to the past without looking at the speed and scope of business change across the enterprise .*

Accelerating Technology and Innovation to Improve Logistics Education

Collaboration Driving the Transformation

- Collaboration among Academia, Industry and Government to drive innovation in the 21st century
- Universities designing curricula to tightly link technical and business disciplines