

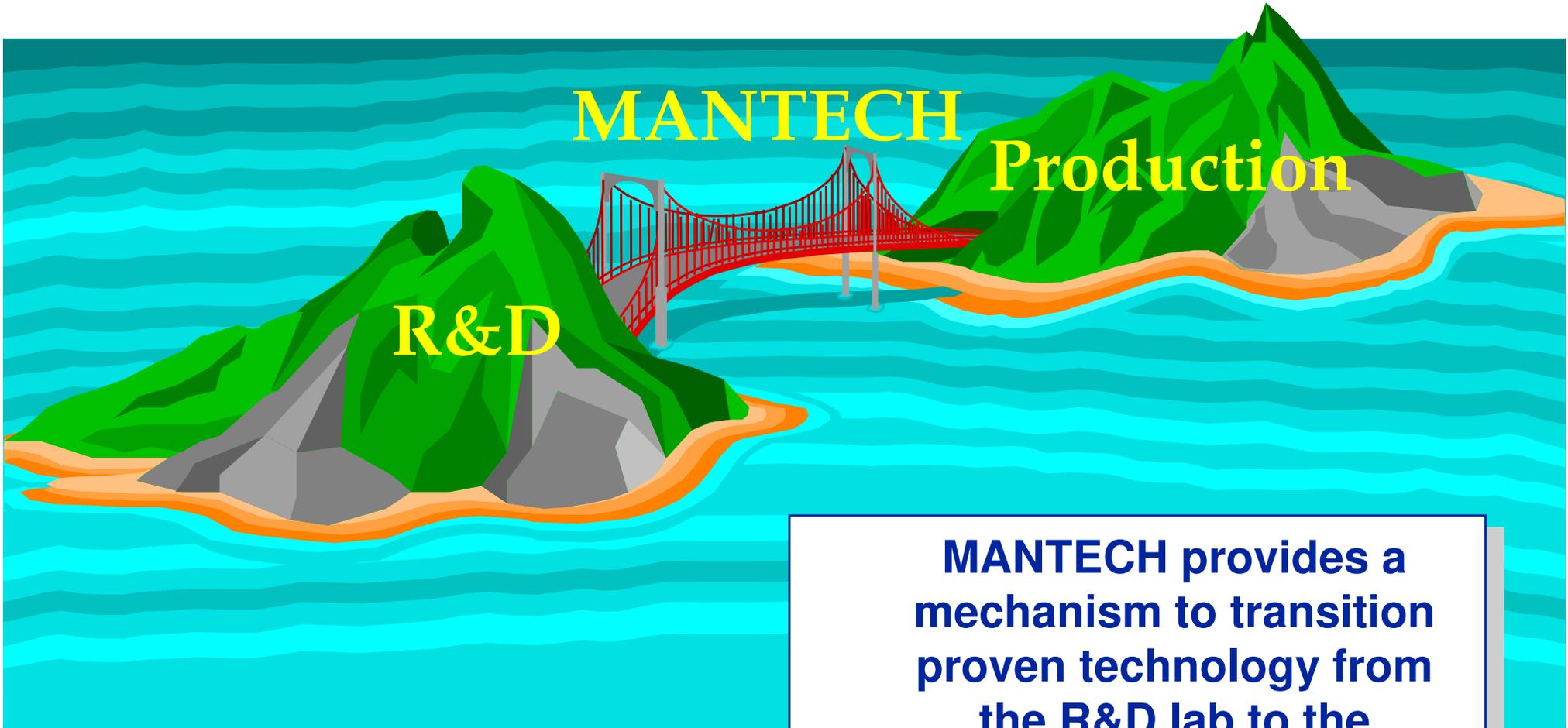


Industrial Partnerships: A DDX Case Study Manufacturing Technology

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4 Aug 04**



What is MANTECH?



MANTECH provides a mechanism to transition proven technology from the R&D lab to the factory floor.



Mission and Functions

- **A mechanism for the development of enabling manufacturing technology, in the form of new equipment and processes, and its implementation on DoD weapon system production lines:**
 - **To be used when industry cannot or will not provide the needed capability in a timely manner**
 - **Should be viewed as a risk reduction program rather than simply a cost reduction program**



Naval Investment Strategy

Primary investment strategy supports key naval assets and Sea Power 21 (70% goal)

Near Term Emphasis



PEO (Ships)
DD X Family



PEO (Carriers)
CVN 21



J-UCAS
J-UCAS



PEO (Subs)
NSSN
SSGN



PEO (T)
F-18 Family
EA-18G



PEO (IWS)
• *Missiles*
• *Weapons*
• *Munitions*



Transformational Technology
• *Logistics*
• *RDT&E*
• *Net Centric*

Remaining 30% of resources will be diversified among Corporate Investments to maintain long-term growth:

- Aging Fleet Initiative (Repair Technology)
- Shipbuilding Enterprise Initiative
- Business Enterprise Initiative (Best Manufacturing, Lean-Pathways, and Supply Chain)



Surface Strike Affordability Initiative

- **Purpose:** Develop and deploy technologies into the DDX industrial base that will enable TOC reductions through new or improved manufacturing processes, methods, techniques or equipment.
- **Non-traditional MANTECH**
 - Coordinated multi-COE platform-focused program
 - Heavy involvement from customers (Ingalls, BIW, and PMS 500)
 - LIPT includes Navy and Industry participants
- **Five Year, \$31.0M Program with Industry Cost Share/Program Office Cost Share**

*Leveraging MANTECH funds to reduce production risk
and ensure a solid transition path*



Participants

	PMS 500	DD2X Industrial Base	ONR	PEO(S)	NAVSEA	COES
Project Identification		X				
Project Selection	X	X	X	X	X	
Program Management & Project Oversight	X	X	X	X	X	
Technology Development		X				X



Management Plan

Contents:

- organizational resource commitments,
- management philosophy, structure, roles, authority, accountability,
- policies governing program execution, and
- key personnel

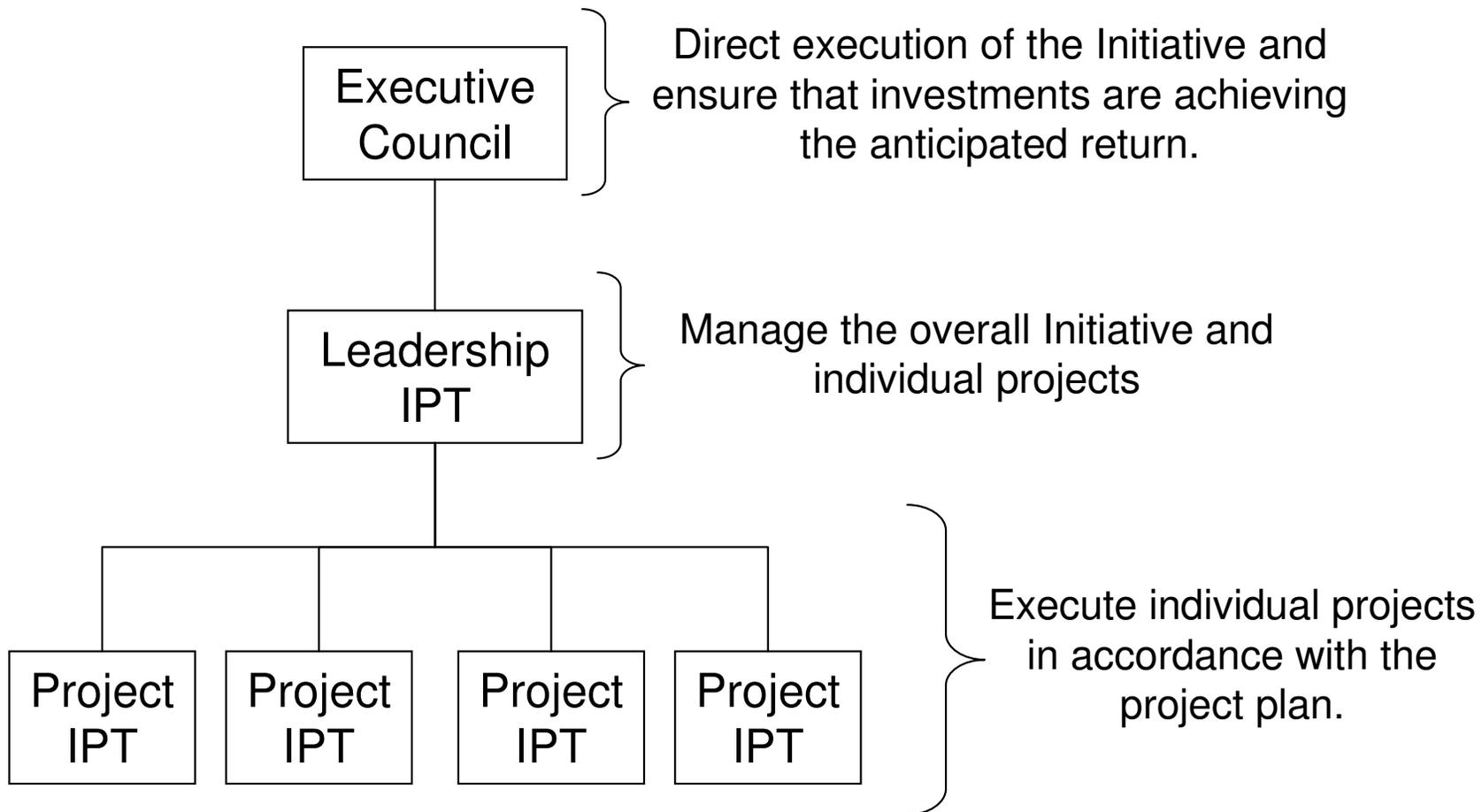
Approval:

- RADM Cohen (CNR),
- RDML Hamilton (PEO(S)),
- Mr. Pete Brown (Executive Director NAVSEA),
- Mr. Thomas Egan (Bath Iron Works Corporation), and
- Mr. Bat Robinson (Northrop Grumman Litton Ingalls Shipbuilding)



Management Structure

Managed by IPTs





Navy MANTECH Program PEO(S) – What We’re Accomplishing

DD(X) - Surface Strike Affordability Initiative

Focused effort directly coinciding with critical DD(X) design decisions.
Goal: Reduce total ownership costs

CNC Thermal Plate Forming

Repeatable, high quality forming of steel plate
Increased quality / reduced cost over current process
Expect 100% increase in throughput, 20% reduction in rework,
50% reduction in labor costs, & safer work conditions
2 year ROI for \$1M process investment (est)

Dimensional and Accuracy Control Automation

Automated tools to improve dimensional control
Reduced fabrication costs
30% potential labor cost reduction based on reducing typical rework / repair
(due to on material distortions & dimensional stackups)

Robotic Welding Simulations for Large Structural Units

Robotic welding simulation package to identify optimum welding
solution and prove manufacturability of structural design concept



Mfg Process Modeling and Simulation

Overall shipyard mfg process model integrating individual models
Enables process change impact assessment
Reduces production risk, reduces cycle time, reduces cost
Reductions in process planning and production time of 15% (est)
Reductions in effort of 20-60% (est)

Collarless Construction

Reduced cost of structural shape penetrations
Estimated 20,000 collars per ship
Reduced weight (due to collars) by 20%
Reduced welding cost and time by 20%

Large Marine Composite to Steel Joints

Reduced cost with composite to steel adhesive joining
20% reduction in labor costs over joints using mechanical fasteners

Lead Magnesium Niobate (PMN) Electrostrictive Transduction Material Mfg

Increased output; decreased size, reduced weight, higher reliability transducers
Enabling technology for Lightweight Broadband Variable Depth Sonar (LBVDS)

Affordable Diode Array Manufacturing

Automated production capability: 500 laser diode bars/day at
greater than 90% yield at cost of \$20 per mounted bar (vs. \$100/bar)

Propulsor Affordability Initiative

Laser welding; encapsulation; high speed machining; leachable cores
6 -12 month reduced mfg time
Cost avoidance of \$3.3M per ship (est)

Multi-Platform



ManTech/DDX Partners

