



Trident Warrior 03



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- **TRIDENT WARRIOR 03 – FORCEnet “Speed to Capability”**
 - Sept. 25-30, 2003, onboard USS ESSEX with the ESSEX Expeditionary Strike Group (CTF 76) off the coast of Okinawa
 - Represented the first large-scale event in the FORCEnet development continuum.
 - Operational Concepts and long term sustainment were built into the exercise
 - Permanently installed equipment was the first increment of bringing FORCEnet to the Fleet.

“Delivering tomorrow's capability to the Warfighter today”

Fn IPD Capability Goals

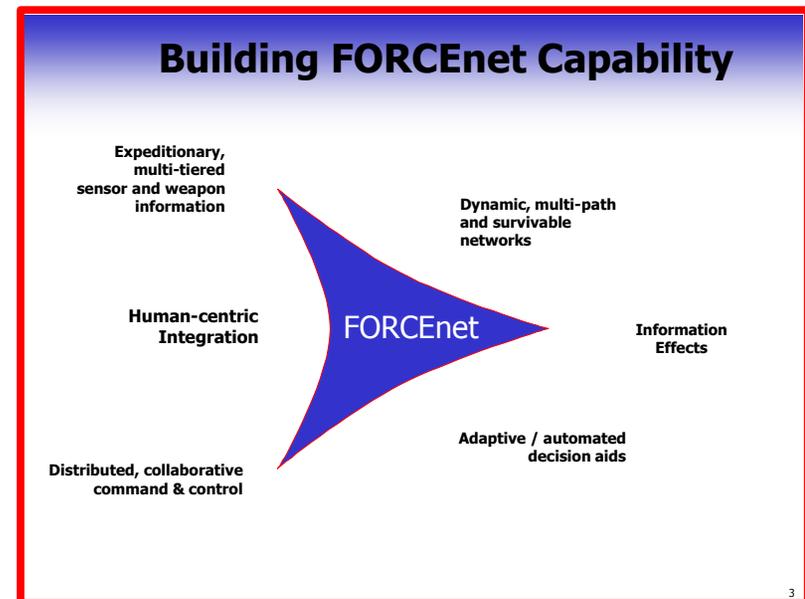


Dynamic, Multipath and Survivable Networks: Core Infrastructure

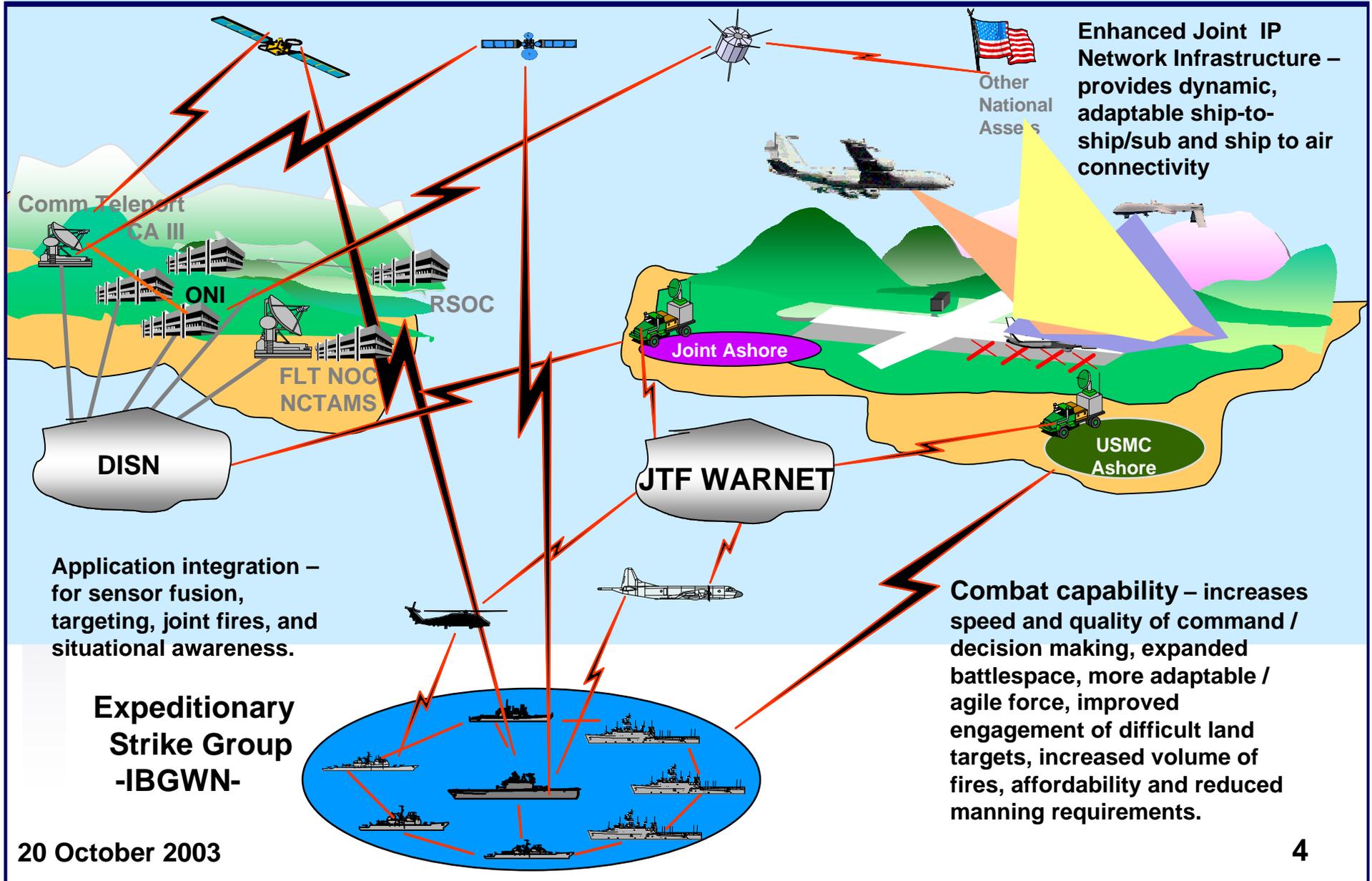
- IP Network Quality-of-Service
- Wireless LOS/BLOS IP Networking
- High Bandwidth IP SATCOM Link
- USMC Network Connectivity

Distributed, collaborative command and control: Applications

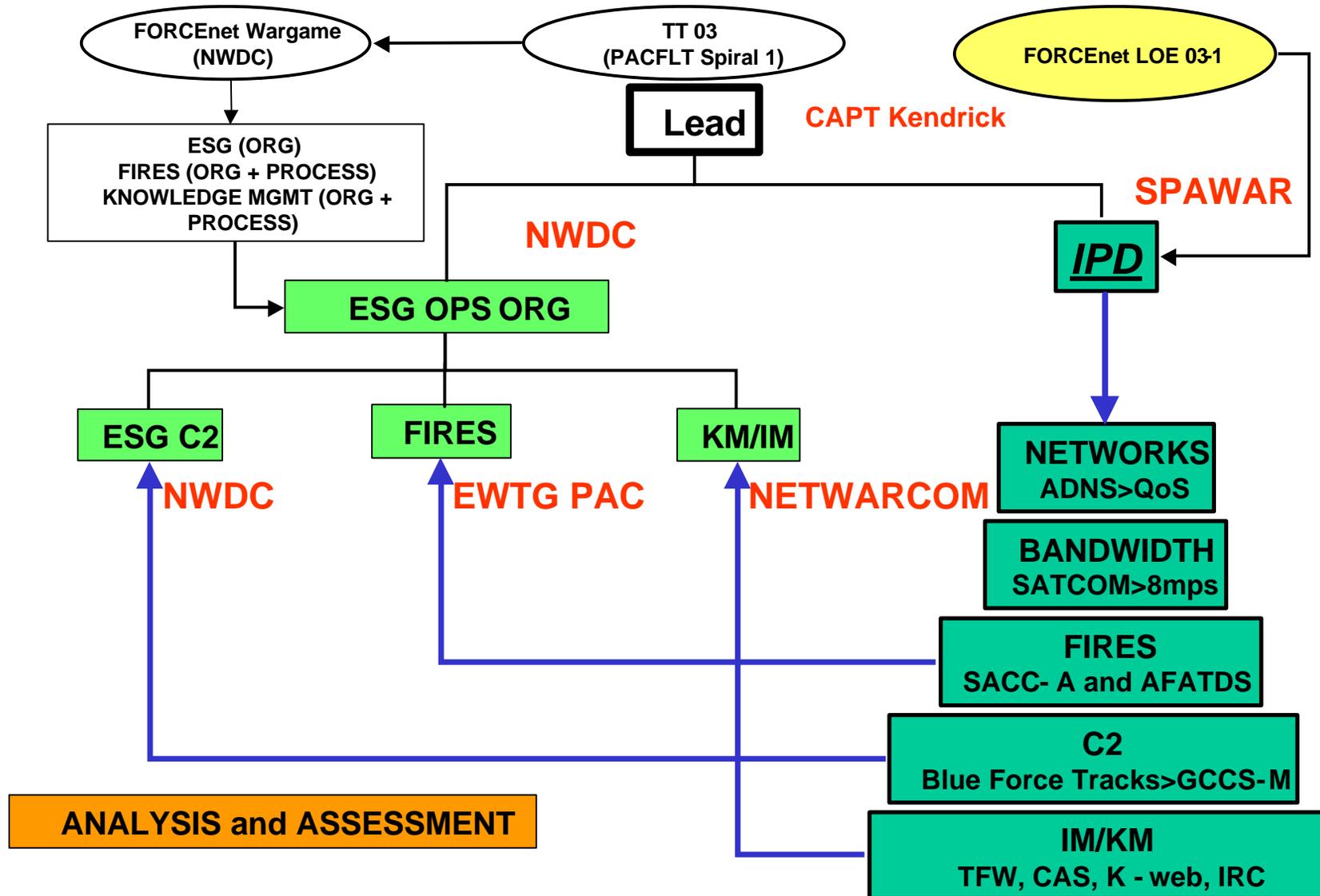
- Support to Fires
- COP Distribution
- Blue Force Tracking



Integrated Prototype Demonstration (IPD) OV-1



What was involved?



Distributed, Multipath, Survivable Networks

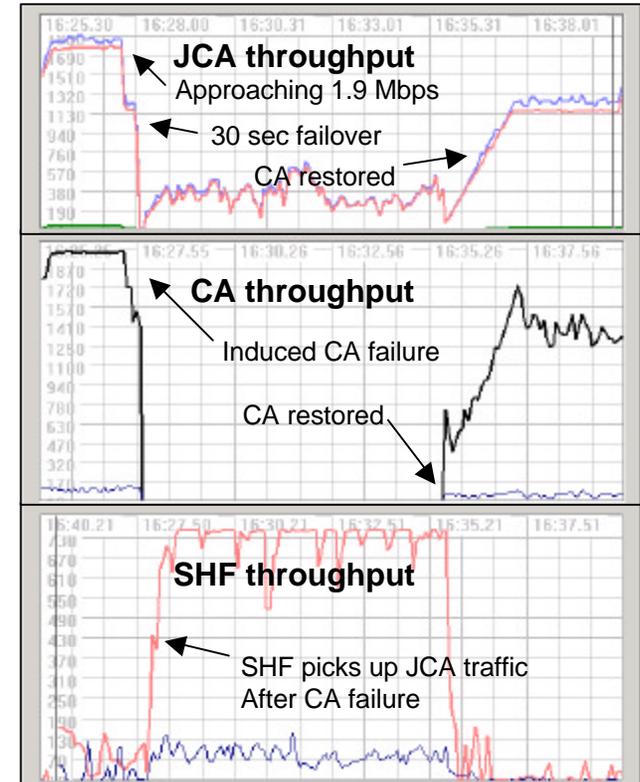


Technical enablers:

- **Automated Digital Networking System**
 - dynamic bandwidth allocation, QoS, load distribution, packet shaping
- **Challenge Athena III**
 - BW increase to 4 Mbps
- **Inter Battle Group Wireless Network**
 - LOS data transfer

Supporting metric areas:

- Measured the ability of the networks to reconfigure
 - Automatic reroute of IP traffic for network link changes transparent to the user (15-30 seconds to reroute).
 - Dynamic allocation of available BW.



Distributed Collaborative, Command and Control



Technical enablers:

- Blue Force Tracking (BFT) Devices
- BFT tracks display in COP
- WEB access to COP and other information

Supporting metric areas:

- Measured the ability to distribute BFT track data to the COP and throughout the network COP applications.
- Measured ability access information from anywhere in the network.
- The results were "good news / bad news".



Expeditionary, Multi-tiered Sensor and Weapon Information

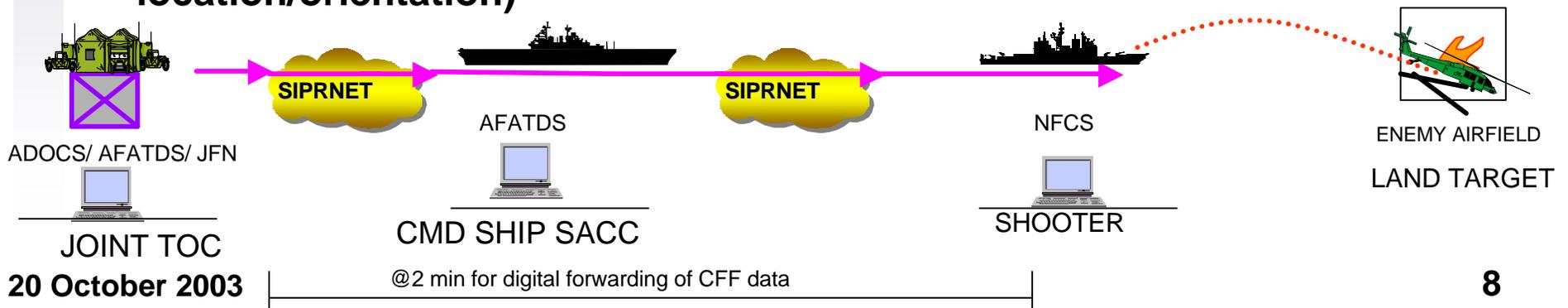


Technical enablers:

- Supporting Arms Coordination Center – Automated (SACC-A)
- AFATDS and Engagement Management Tool (part of SACC-A installation)
- ADOCS (digital battle management)
- NFCS (utilized NAVSEA prototype software)

Supporting metrics:

- Joint Multiple calls for fires were generated (USMC-USN, USA-USN, USN-USN) Timelines significantly reduced compared to legacy Naval procedures
- End to End Naval digital targeting
- Joint Digital forwarding of call for fires took under 2 min
- Actual end-to-end engagement depends on many variables (e.g. ships location/orientation)



General Observations



- **Warfighter's use of the emergent web-based IM tools was underutilized due to the lack of fundamentals of policies on how to operate with the tools. This was a noted cultural issue with the FDNF ESG.**
- **Manpower levels for newly installed fires support systems are deficient. Many systems are only manned one deep.**
- **Increase bandwidth provided was underutilized due to:**
 - Applications were not optimized (TCP window size) to take advantage of available bandwidth.

What TW03 means to Industry



- Systems Integration is difficult and expensive
- Navy Manpower is limited, none of these systems took any less manpower
- Navy ability to train it limited, none of these systems took any less training
- Equipment replacement and refresh is expensive, better known as the legacy equipment issue
- Data Collection requirements – making apples equal oranges



QUESTIONS?