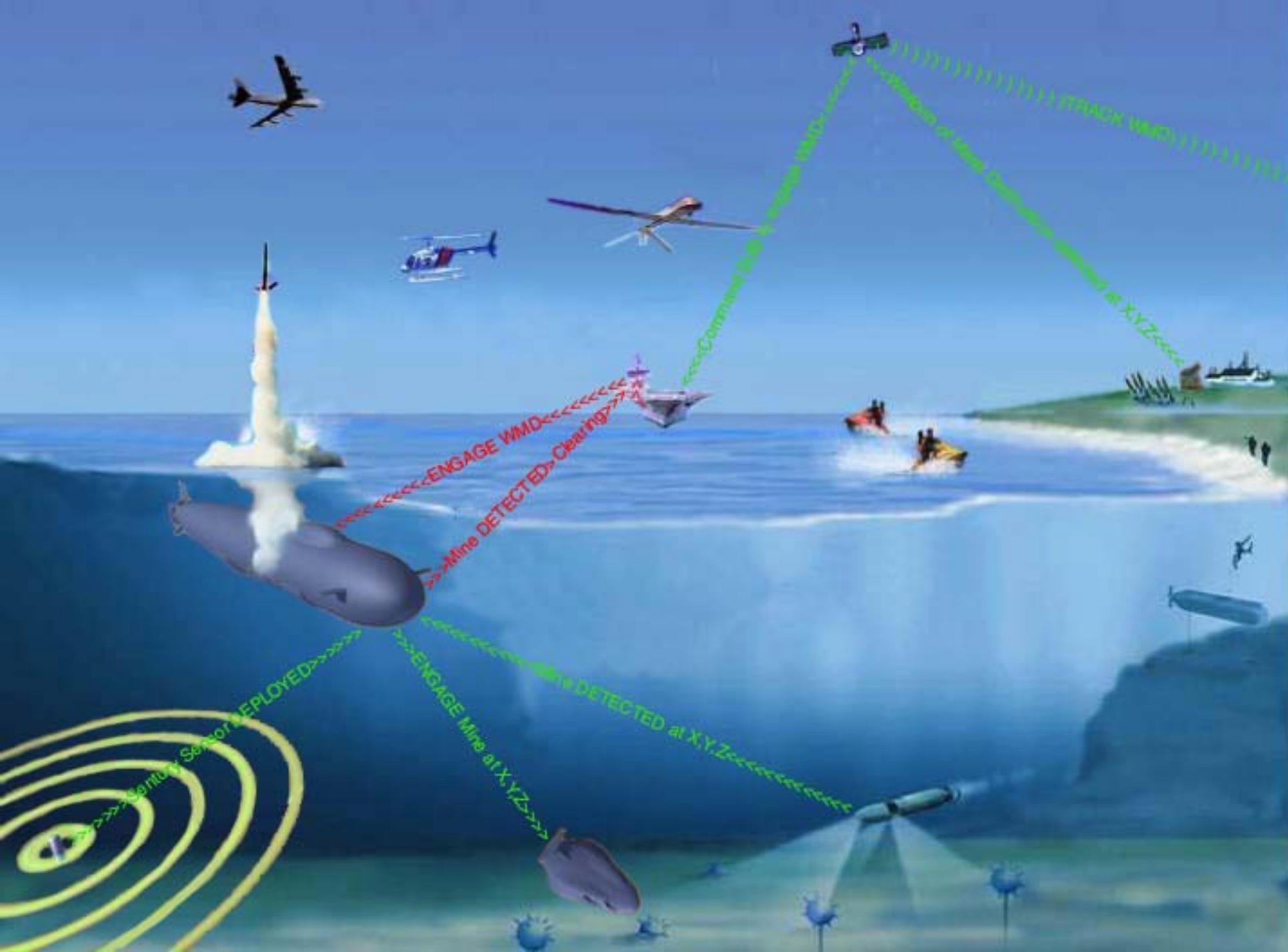




SUBMARINE PROGRAM TECHNOLOGY NEEDS

NAVAL-INDUSTRY
R&D PARTNERSHIP CONFERENCE

Rear Admiral John D. Butler, USN
14 August 2002



**Gain and Sustain
Battleforce Access**

**Develop and Share
Knowledge**

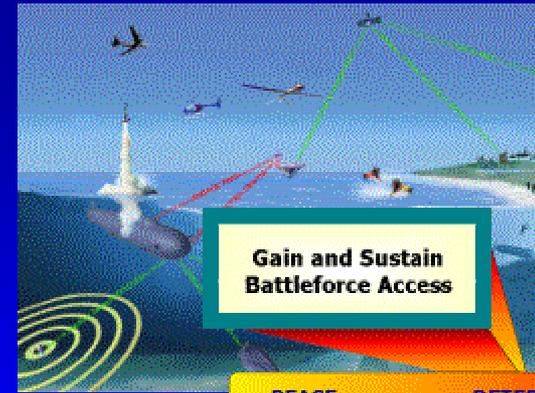
PEACE

DETERRENCE

CONFLICT

**Deter Conflict and
Counter Weapons of
Mass Destruction**

**Project Power with
Surprise from
Close-in**



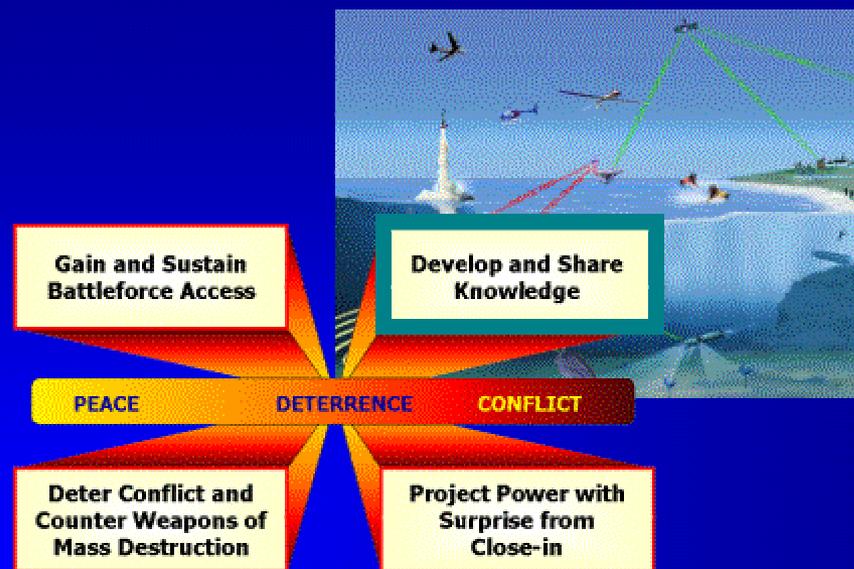
- ✓ **UUVs & UAVs**
- ✓ **Navigation Aids**
- ✓ **Information Processing**
- ✓ **Communications**
- ✓ **Classification & Targeting**
- ✓ **Detection Tools**
- ✓ **Undersea Survey Tools**
- ✓ **Weapons (underwater to surface, air & land)**

✓ **Data Management**

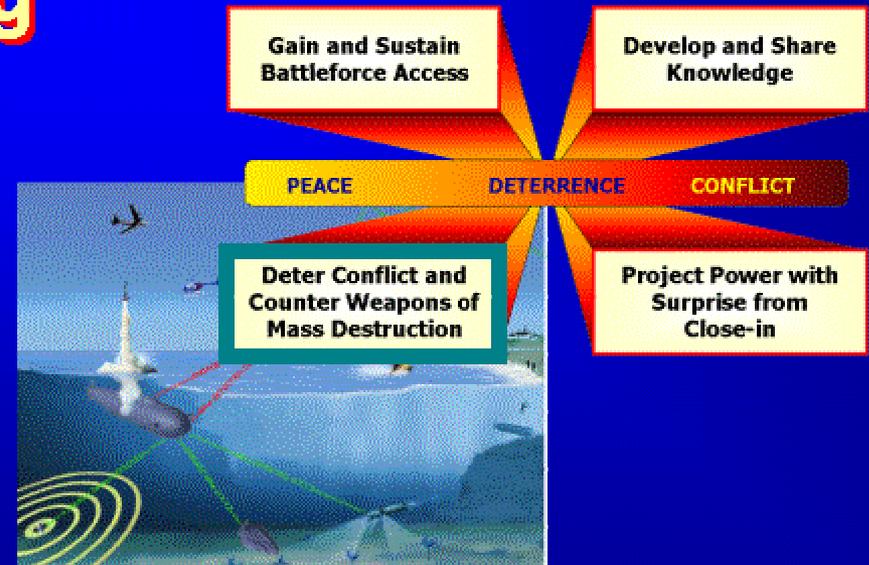
✓ **Undersea
Communication
Grids**

✓ **Communication Links (to UUVs/UAVs, ships,
aircraft, satellites, undersea grids,
land sensors, etc.)**

✓ **Equipment, Systems & Processors
(Antennae, Periscopes, Receivers &
Transmitters, Imaging, Lasers, Radar, etc.)**

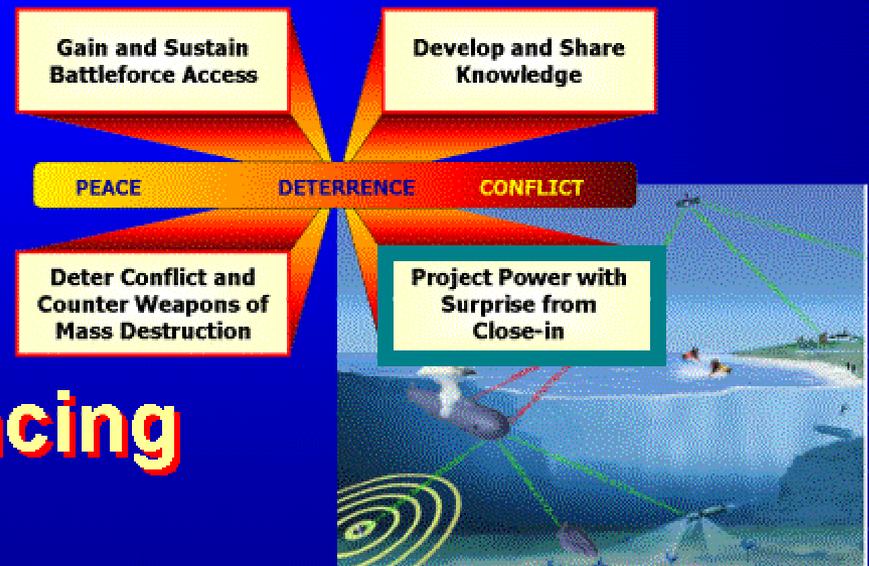


- ✓ **Platform Monitoring & Decontamination**
- ✓ **UUV & UAV Deployed Sensors**
(mass spectrometers, gas chromatometers, hyper-spectral imaging, fiber-optic, etc.)
- ✓ **Sensor Data Analysis & Diagnostic Tools**
- ✓ **Warning & Reporting Network**
- ✓ **ISRT Systems**
- ✓ **Agents & Weapons to Counter WMD**

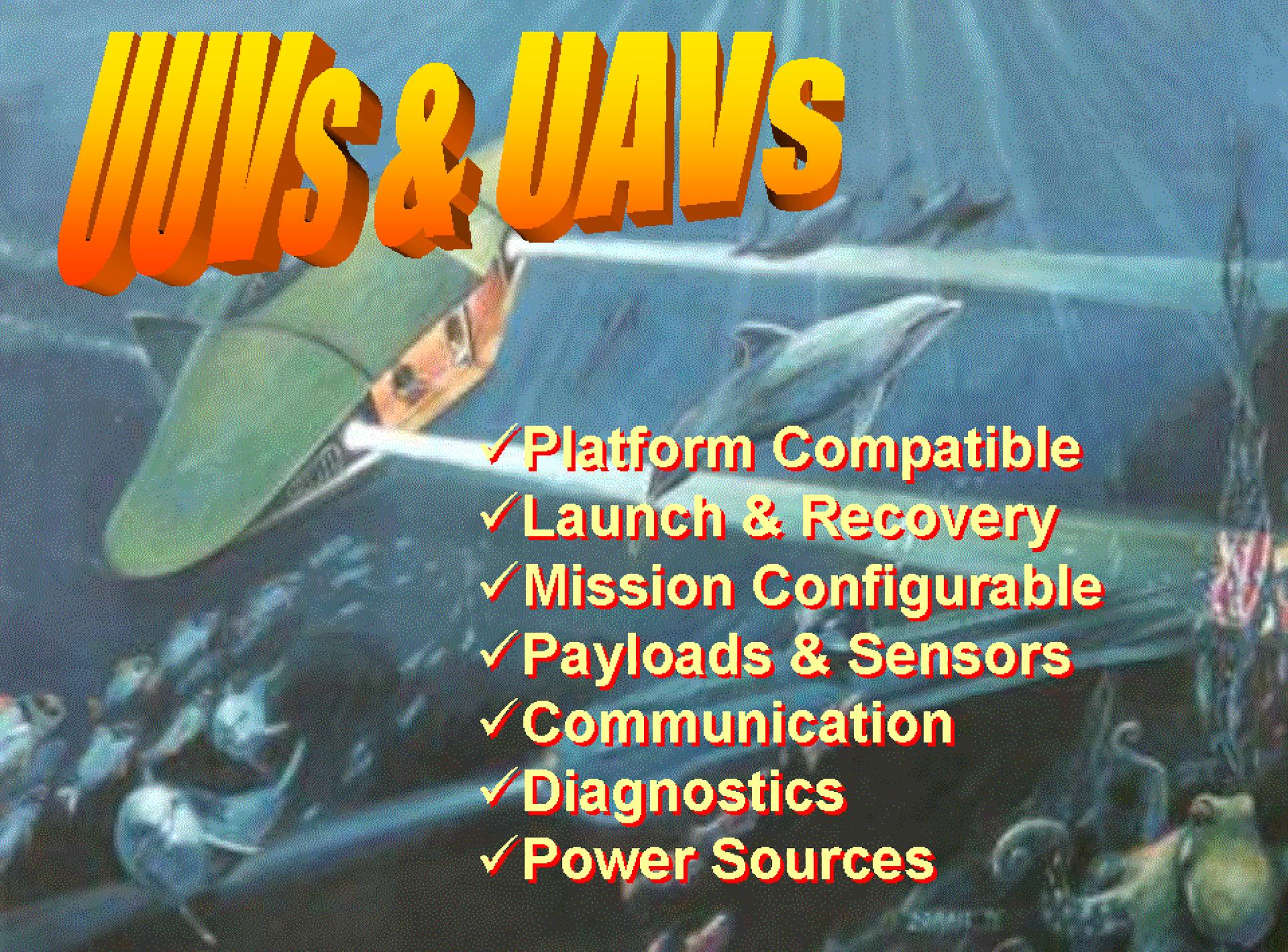


- ✓ **Multi-Mode Weapon Systems**
- ✓ **Multiple Weapon Launch Canisters**
- ✓ **Automatic Target Detection, Recognition & Classification**
- ✓ **Real-Time Retargeting**

- ✓ **Machinery Quieting**
- ✓ **Propulsors**
- ✓ **Coatings & EM Silencing**



UUVs & UAVs



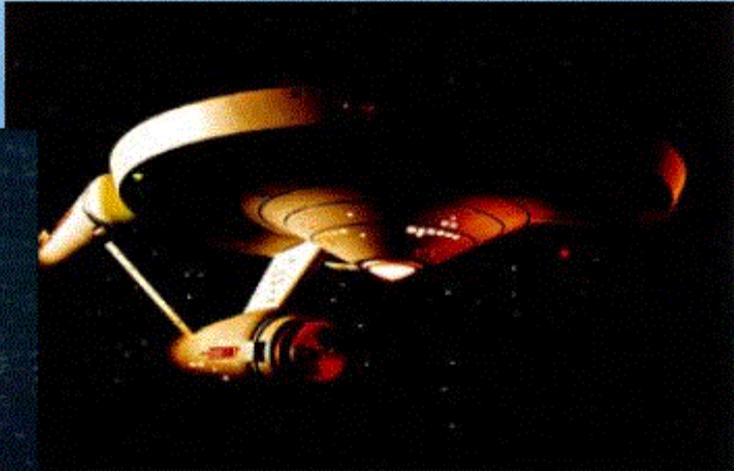
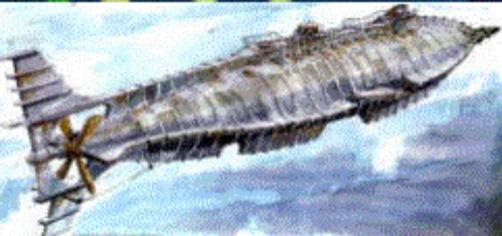
- ✓ Platform Compatible
- ✓ Launch & Recovery
- ✓ Mission Configurable
- ✓ Payloads & Sensors
- ✓ Communication
- ✓ Diagnostics
- ✓ Power Sources

Transformation



Mine DETECTED
Cbramp

Sensor EMPLOYED



SSBN-SSGN DEMONSTRATION

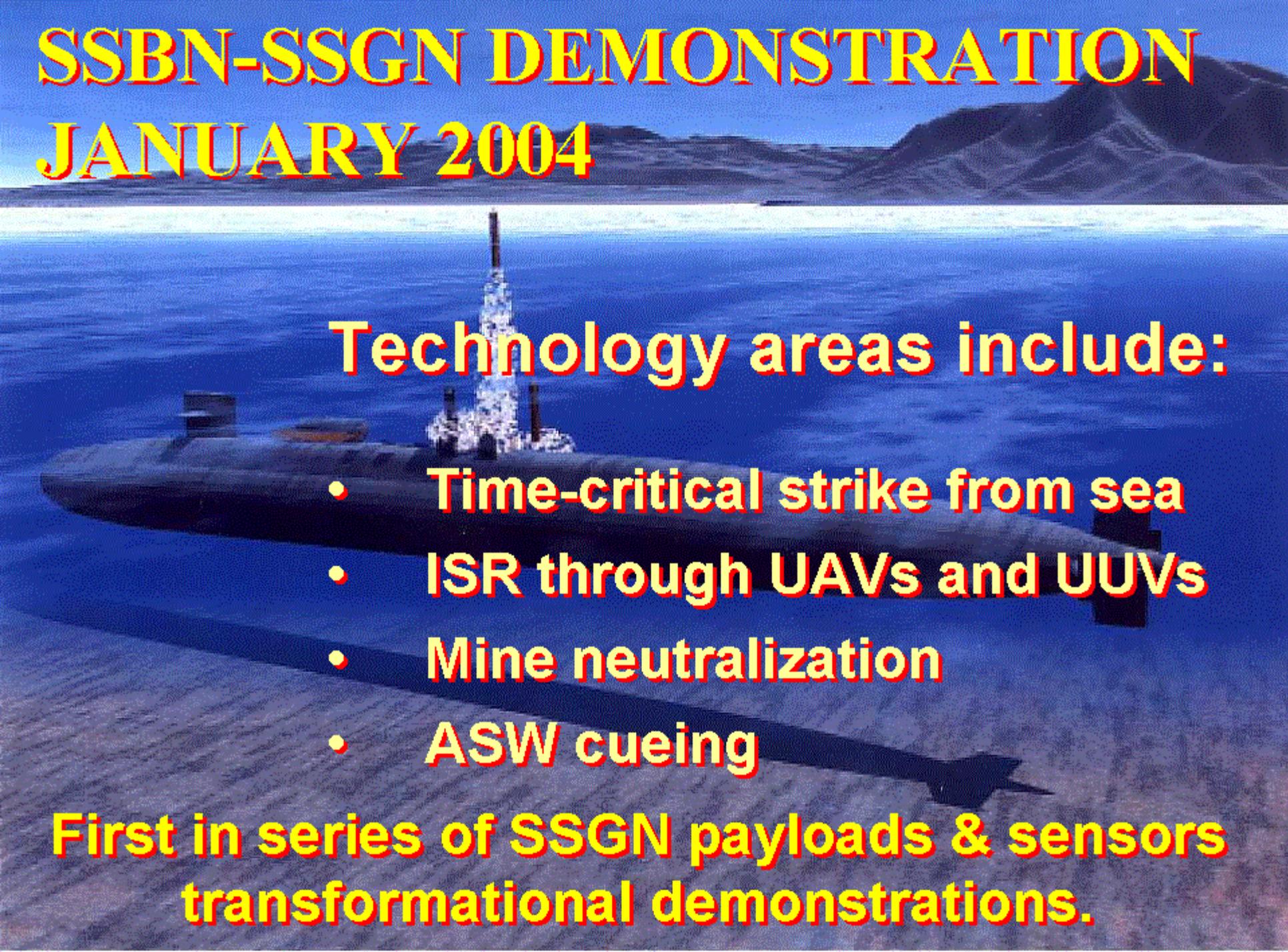
JANUARY 2003



Demonstrates how future force network of Special Operation Forces, Unmanned Vehicles, and a stealthy SSGN Platform can combine to provide new capability options to Joint Force Commander.

SSBN-SSGN DEMONSTRATION

JANUARY 2004

A photograph of a submarine on the surface of the ocean. A missile is being launched from the deck, creating a large plume of white smoke and water. The background shows a clear blue sky and distant mountains.

Technology areas include:

- **Time-critical strike from sea**
- **ISR through UAVs and UUVs**
- **Mine neutralization**
- **ASW cueing**

First in series of SSGN payloads & sensors transformational demonstrations.

"To boldly go where no submarine has gone before."



Admiral's Log -- August 2002:

"The Naval-Industry Partnership Continues."