

# Game-Based Learning

**“From Commercial Game to Fleet Support”**

**Presented to:**

**NSRP Crosscut Initiatives Panel**

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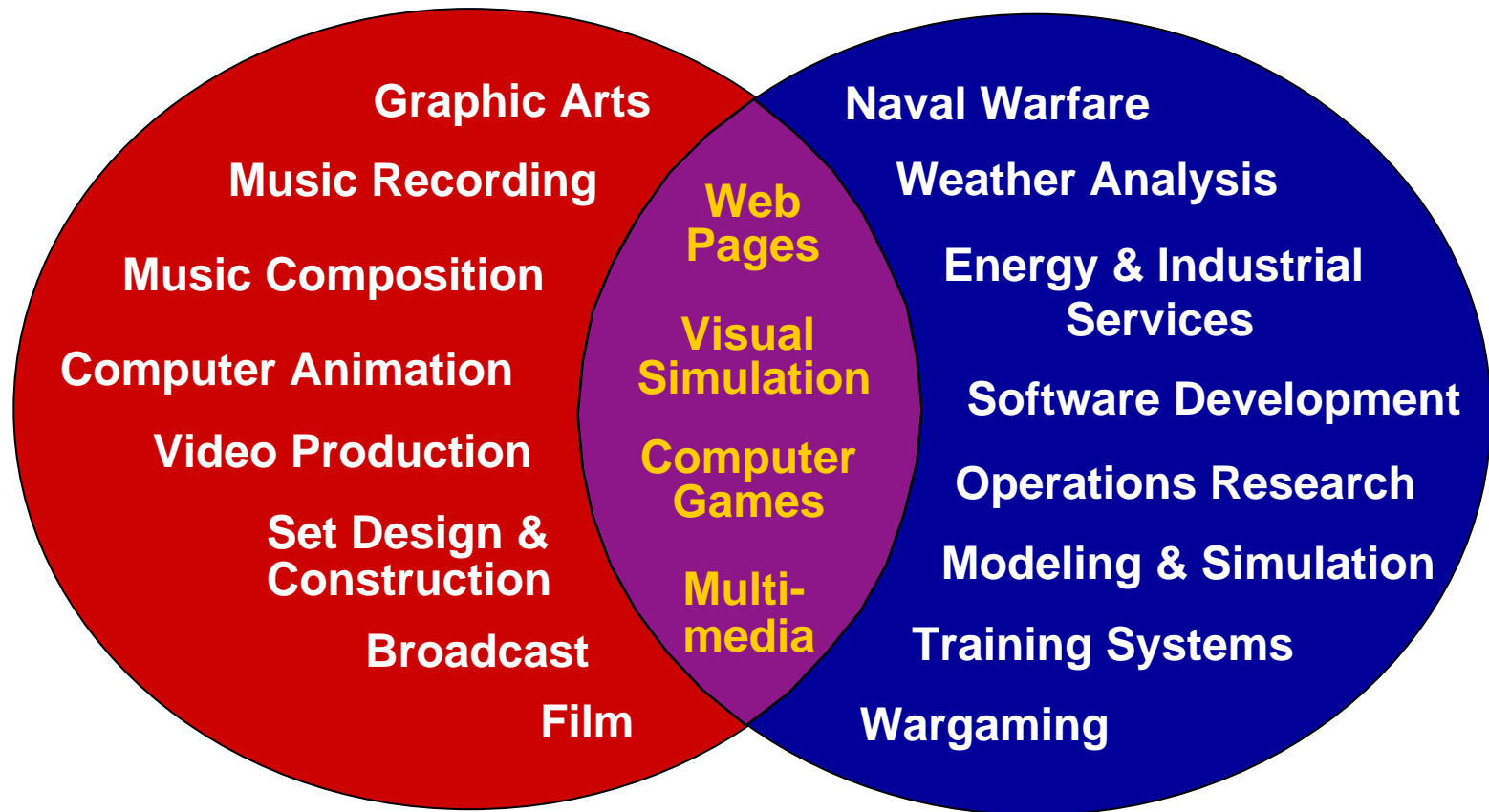
**Sonalysts, Inc.**

# SONALYSTS

- Designs, develops, implements & supports advanced modeling and simulation capabilities for both Government and commercial customers
- 15 offices across the United States
- Employee-owned
- Founded in 1973
- More than 400 partners
- 30% of Sonalysts partners former or retired military, primarily Navy



# Core Capabilities



**Creativity & Design**

**Science & Engineering**

# Concept Analysis Projects

- Sonalysts is uniquely qualified to adapt commercial games to support concept analysis modeling and simulation through adaptation of commercial games
  - Game development group
  - Multimedia production facilities and staff
  - Personnel with diverse and extensive operational backgrounds
  - Extensive concept development experience
  - Sonalysts owns the software source code
- CNO SSG, NWDC, DARPA Payloads and Sensors Project, DD 21 Gold Team, DD(X), and SBIR Program are examples.

# Training Projects

- CNET MISSILE project approved 688(I), JFC, and SC for use by USNA and NROTC training.
- Developed prototype Expeditionary Warfare Training Support Module (EWTSM) as Phase II SBIR
- Surface Warfare Tactical Training Continuum (SWTTC) delivered over 1700 copies of JFC to all Navy ships and training commands.
- Design, manning and training modeling tool for shipboard aircraft operations Phase II SBIR

# Research & Development Projects

- General enhancements:
  - Provide data collection at critical events
  - Real time 3D human simulation
  - Improve output formats
  - Collaborative team within platform
  - Database editor, tactics editor, and tutor integration
- Project Experience
  - NWDC Fleet Battle Experiments and NWC Global,
  - Navy Research (DARPA, ONR, NAVAIR, NSWC, SUBDEVRON, and DD(X))
  - USAF Research (AFRL and Air University)

# SBIR Projects – Phase III Efforts

- **ASTAC ITA**

- ASW/ASUW Tactical Air Controller Intelligent Training AID
- First Closed-Loop Adaptive Training Application
- Phase III contract to build production ASTAC Training System for Center for Surface Combat Systems (CSCS)
- Combines use of Adaptive Interactive Multimedia Instruction and Simulation-Based Intelligent Tutoring



# SBIR Projects – Phase II Efforts

- **Shipboard Aircraft Operations Modeling Tool Prototype**
  - Integrates “Dangerous Waters” Sim Engine with Boston Dynamics 3D Human Model
  - Supports Design, Manning, and Training of Shipboard Aircraft Operations for DD(X) and DDG 51
  - DD(X)/NSWC Sponsorship
- **Tutor Grain Size Comparison**
  - Developing Two Intelligent Tutors of Different Detail Levels for ONR
  - Evaluating Comparative Effectiveness



# SBIR Projects – Phase II Efforts

- **Agent-Based Performance Support and Training System Prototype**
  - Portable Electronic Performance Support System for Shipboard Maintenance
  - Provides adaptive IMI for maintenance training on reduced-manning ships
  - Uses Wearable PC with “Reach Back” to On-Demand Information and Training
  - DD(X)/NSWC Sponsorship



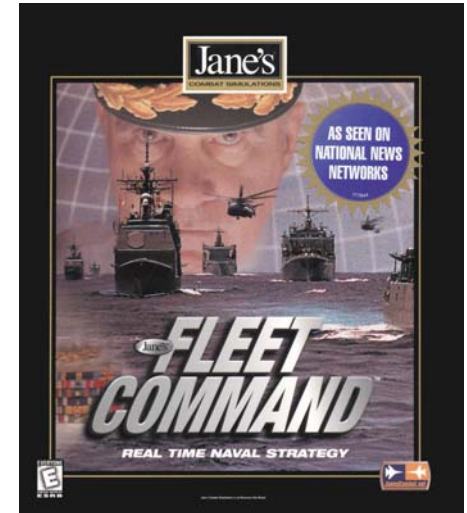
# SBIR Projects – Phase II Efforts

- **Trade Space for Systems Analysis (TSSA) Tool**
  - Enables multiple groups of systems engineers to collaborate on automation requirements and design decisions
  - Sponsored by NSWCCD
- **Integrated Satellite Operations Trainer (ISOT)**
  - Developed for Air Force Research Laboratory Mesa, AZ
  - Uses Closed-Loop Adaptive Training technology



# Commercial PC Combat Simulations

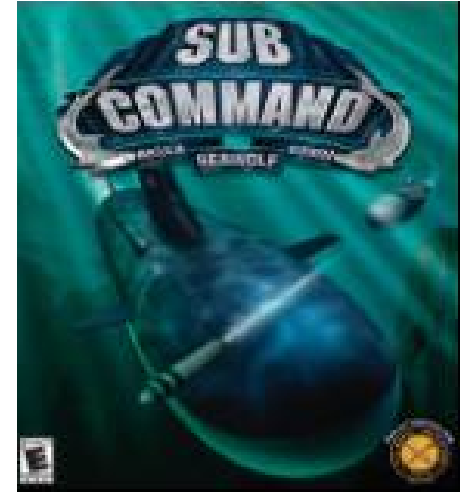
- ***688(I) Hunter/Killer™***
  - “Best Combat Simulation” for 1997 (PC Games magazine)
  - “Most Intellectually Challenging Game” (Guinness 1999 Book of Records)
  - Citation of cost effective training (CNET)
  - U.S. and Royal Navy training
- ***Jane's Fleet Command™***
  - U.S. Naval Academy uses for NS 310 Naval Operations and Tactics Training Course
  - Concept exploration at the Navy's Strategic Studies Group NWDC



# Commercial PC Combat Simulations

- ***Sub Command™***

- Significant advance in gaming capability
- Multi-player and multi-station team training, voice commands as options
- Surface Warfare Tactical Training Continuum (SWTTC): Wardroom Tactical Training Using Sonalysts PC Gaming Engine



- ***Sonalysts Combat Simulations - Dangerous Waters™***

- Released in February 2005
- First title of its kind, allowing the player total control over multiple air, surface and subsurface platforms in a modern-day naval environment



# Future Look

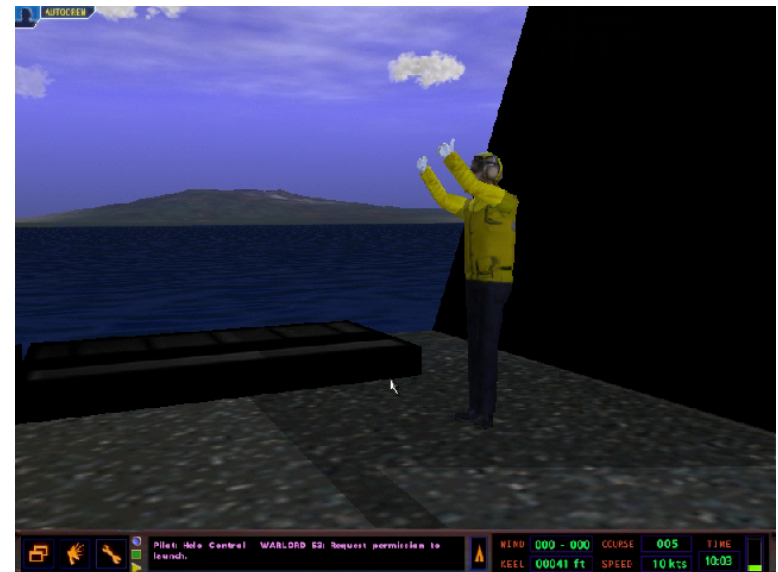
## Modeling Tool for Design, Manning, and Training of Shipboard Aircraft Operations

- PC-Based Modeling Tool
- Support concept analysis, design, and training for aircraft capable surface ships
- Diverse users
- Broad applicability across ship classes.
- Project focus on DD(X) and DDG-51 ships



# Approach

- Commercial naval simulation engine technology, resident in *Sonalysts Combat Simulations - Dangerous Waters*™
- Boston Dynamics, DI-Guy™ Commercial off-the-shelf simulation adds real time 3-D human characters
- Integrating these two simulations yields the baseline technology with a Military product focus.



# Prototype Video Capture: MH-60R

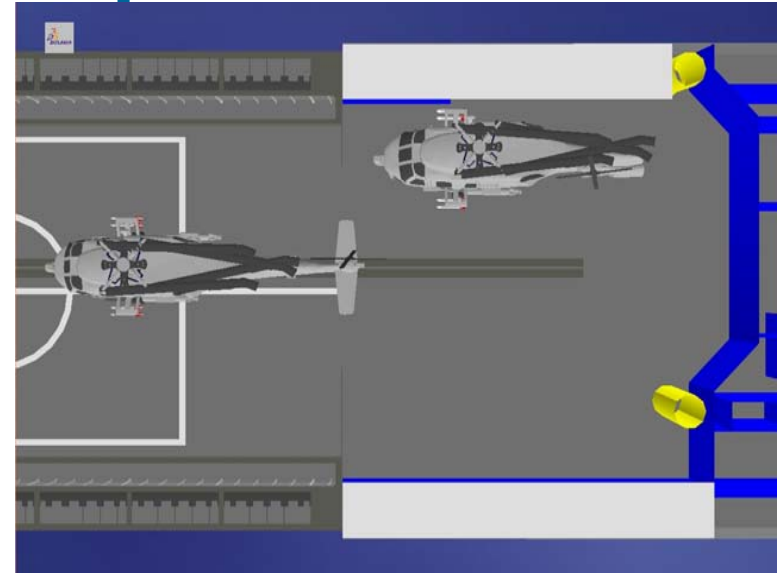


# Performance Specifications

<b>Feature</b>	<b>Advantage</b>	<b>Benefit</b>
PC/Windows-based networked training	Includes entire shipboard personnel team	Supports integrated product design teams
Includes manned and unmanned helicopter aircraft	Supports visualization future aircraft operations	Support both training and design assessments
Integrates commercial products	Mature and available for modeling, simulation & training TODAY	Familiar features and capabilities

# Comparison with other Options

- Greater understanding with personnel interactions
- Increased robustness with simulation solution
- Same tool will support test and evaluation, design, and training



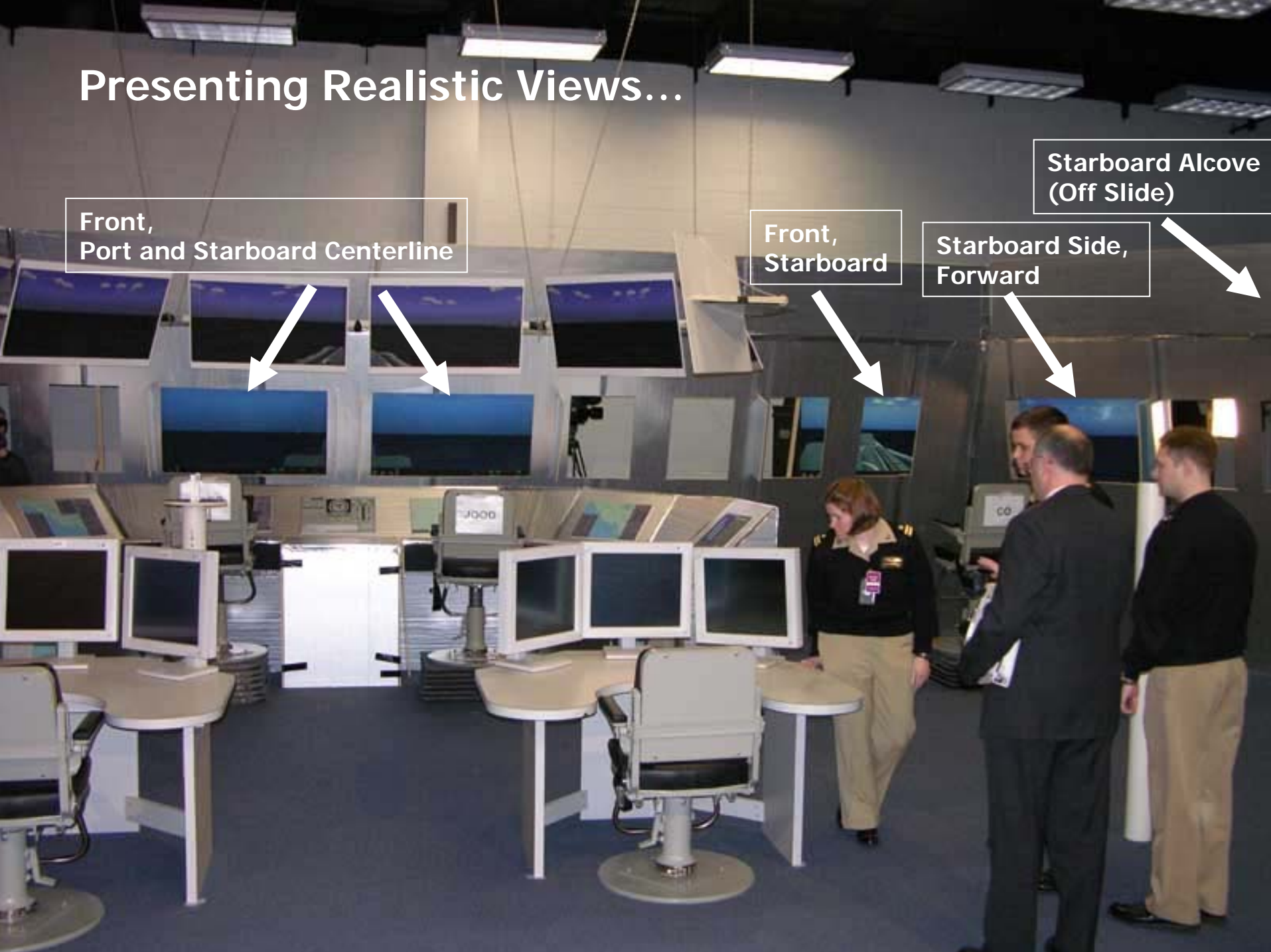
# Presenting Realistic Views...

Front,  
Port and Starboard Centerline

Front,  
Starboard

Starboard Side,  
Forward

Starboard Alcove  
(Off Slide)



# QUESTIONS?



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