



TechSolutions

Connecting the Warfighter to the Scientist





Rudder Order...



***“I never, ever, want to see a Sailor or a Marine
in a fair fight! ... We have to get technology to the Fleet faster.”
- ADM (Ret.) Gary Roughead, Former Chief of Naval Operations***

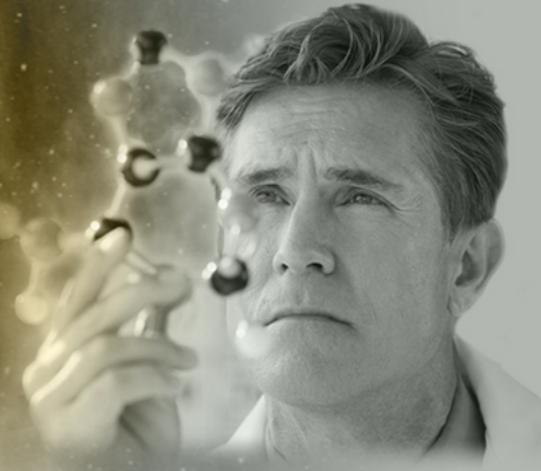


Needs Driven Process

I have a
Need!

REQUIREMENT

I have an
Idea!



CAPABILITY



What is TechSolutions?

Rapid-response S&T solutions to current Fleet/Force needs identified by Sailors and Marines

- **Solutions to immediate deck-plate level issues**

- Warfighter-driven requests for high-interest, near-term needs

- **New applications of emerging/existing technologies**

- Well-bounded problems with S&T solutions
- Provide benefit to the individual warfighter
- Prototypes evaluated in an operational context

- **Goal: prototype demo within ~12-18 months of request**

- Prototype delivered to original requestor, when possible
- Submitter, command staff and technical experts stay involved throughout the project



Typical Project Profile

- Request submitted by uniformed Sailor or Marine
 - Or by ONR Science Advisor(s)
 - Accept E1-O10, but target E4-O4
- Solution developed by Naval Research Enterprise (NRE) or National Labs
 - Commercial and/or academic partners are common and encouraged
- Average project ~\$750K total
- Maximum 12 months to complete from kickoff
- Feedback from Fleet/Force early and often



Project Examples

- M224 60MM Mortar Fire Control Enhancement
- Speech-to-Speech Translation Tool(S2T2)
- Bomb Assembly Table
- Improved Flight Deck Clothing



Project: M224 60MM Mortar Fire Control Enhancement

Operational Need:

M-224 60mm Mortar requires update to allow accurate use during handheld deployment in both day and night conditions

Solution:

A new Fire Control Unit loaded with M224 Ballistics Tables that can be used day/night & also incorporates strap w/ an integrated heat shield





Project: Speech-to-Speech Translation Tool (S2T2)

Operational Need:

Ability to complete simple interviews & data collection missions when human interpreter is unavailable.

Solution:

An enhanced commercially available speech recognition with special linguistic models focused on Humanitarian Assistance Disaster Relief (HADR), Engineering, and Civil Affairs topic domains.





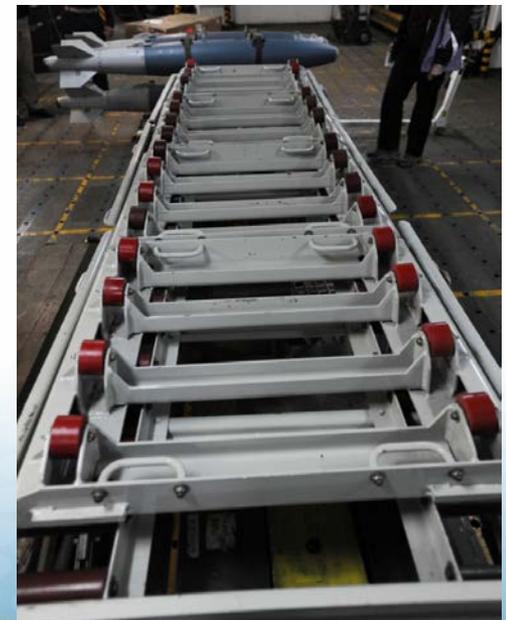
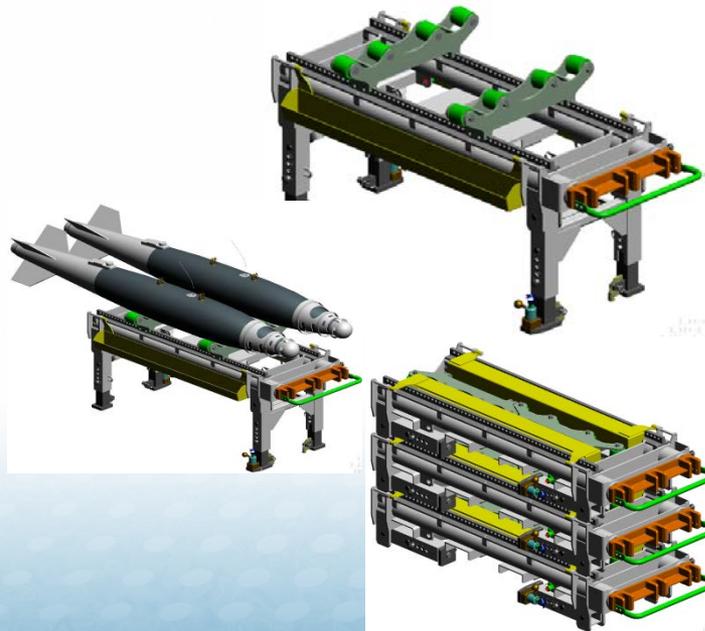
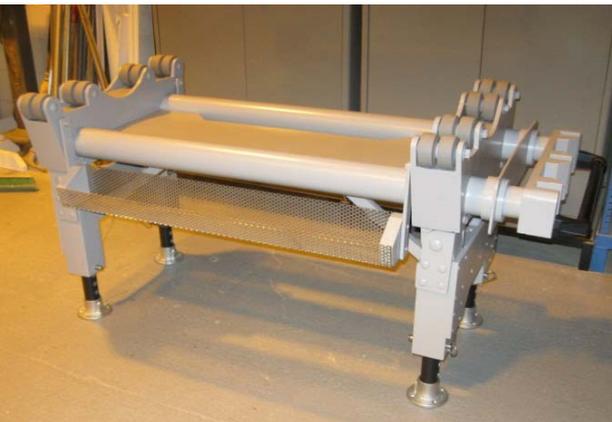
Project: Bomb Assembly Table

Operational Need:

Improve Sailor access to each weapon, improve ergonomics, and decrease sailor workload.

Solution:

Multiple small assembly workstations (easily collapsible for stowage & transport) each capable of supporting single or multiple weapons.





Project: Improved Flight Deck Clothing

Operational Need:

Enhance comfort in extreme weather & improve safety with high-tech fabrics.

Solution:

Commercially available moisture-wicking fabric and petroleum resistant. Improved trouser pattern w/ special design features to accommodate gear.





Submit a Request via TechSolutions website

U.S. Navy Website



CONTACT US | EMAIL



HOME ABOUT US REQUEST A SOLUTION ACCOUNT CONTACT

TechSolutions is an Office of Naval Research rapid-response science and technology program focused on producing prototype solutions to problems submitted by Sailors and Marines. [Click here](#) for more information about the program.

For Warfighters:

TechSolutions can engage the Department of the Navy's science and technology community to develop technologies to solve your problems. All you have to do is [request a solution!](#)

For the Navy S&T Community:

TechSolutions can provide you with insight into problems facing the Warfighters, and with funding to develop solutions. For access to the TechSolutions website, [request an account.](#)

REQUEST A SOLUTION

REQUEST AN ACCOUNT

ACCESS THE WEBSITE

(Account Required)



Contact Information

- **Email:** onr_techsolutions@navy.mil
- **Website:** www.onr.navy.mil/techsolutions
- **Videos:** Watch TechSolutions videos on the US Navy Research channel on www.youtube.com
- **Phone:** 703-696-0616
- **Team members:**
 - Mr. Tom Gallagher
 - Mr. Brian Reteneller
 - Ms. Dylan Leckie



BACKUP



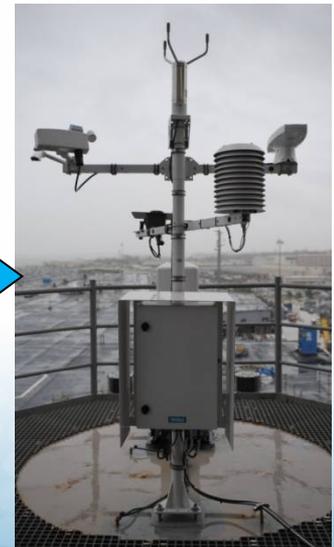
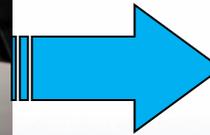
Project: Automated Shipboard Weather Observation System

Operational Need:

Improvement over the present method of collecting daily weather data.

Solution:

Network-enabled multi-sensors replace legacy wind sensors and accurately report global maritime weather conditions with timely data transmission to Fleet Weather Centers.





Project: Advanced High Energy Underwater Battery

Operational Need:

A safe, affordable, scalable, high energy battery system optimized for undersea vehicle applications.

Solution:

Improved electrical safety & heat isolation/dissipation packaging for COTS 18650 LCO cells. A modular battery system that can be configured to create almost any cross-sectional shape.





Project: Automated Catapult Shot Log

Operational Need:

Automate the recording of the Steam Catapult Data Logs to eliminate transcription errors.

Solution:

Suite of COTS pressure, temperature, & displacement sensors, touch panel PC interfaces, data acquisition equipment, & network interfaces will gather/process data needed to build up Shot Log data per shot.



Cat 1		Cat 2		Cat 3		Cat 4	
Aircraft Data		Launch Conditions		Event ID		Shot #	
Type: F-18		Day	Night	1		Date: 2007-03-21	
Weight: 400		Ambient Temp: 80				Time: 00:00:00	
Side #: 101		CSV Wind: 20				CSV / Performance	
		Actual Wind: 24				CSV Setting: 180	
Steam Receiver Data		Cylinder Elongation		Left: 7		Click 1: 0.3	
Press After: 280				Right: 7.2		Click 2: 0.1	
Steam Temp: 459						End Speed: 145	
Water Temp: 464							
Water Level: 45							
Sensor Data		Launch Valve Closing Pressure:		Launch Valve Opening Pressure:		Launch Valve Stroke:	
Hydraulic Accumulator Volume:							
Launch Valve Lift:							
Launch Valve Rotation:							
Steam Accumulator Pressure:							

