

SMIRF features, advantages and benefits include:

Feature	Advantage	Benefit
Automated sensor selection	Automates what is now a manual process of switching between different sensors	Greatly reduces operator workload and provides instantaneous high-resolution sensor image with no operator intervention
Algorithmic-based image contrast optimization and sensor output fusion	Higher contrast of multi-sensor fused targets of interest with reduced image clutter	Increases capability to detect, identify, and track targets of interest; increase operator situational awareness
Open architecture software design	Enables rapid technology insertion in existing or planned sensor control systems	Reduces integration and time-to-deployment; increases availability of technology across platforms

NAVSEA has identified the capabilities that SMIRF provides – the ability to integrate and fuse multi-spectral sensors and automated tools for detection, tracking, and classification – as high-priority for implementation via the Advanced Processor Build (APB) process.

CURRENT STATE OF DEVELOPMENT

The SMIRF Phase II effort is nearing the 10-month mark, and is currently at Technology Readiness Level (TRL) 4. The balance of the Phase II base period will involve testing using maritime environment data from actual submarine sensor modalities to exercise the algorithms and validate results, which will result in reaching TRL 5.

Phase II Option 1, if exercised in Q2 2012, will involve refinement of the algorithms and improving their processing speed. Phase II Option 2, if exercised in Q1 2013, is slated to test SMIRF at the shore-based Naval Undersea Warfare Center (NUWC) in Newport, RI. Thus, at Phase II completion in Q2 2013, SMIRF should be at TRL 6.

Beyond Phase II, we anticipate moving forward with further, more operationally realistic developmental testing and evaluation (DT&E), potentially at sea, resulting in reaching TRL 7 or TRL 8 by the end of 2013 or mid-2014, depending on funding and scheduling exigencies.

REFERENCES

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WHEN THE TECHNOLOGY WILL BE READY FOR USE

The SMIRF architecture has been designed and implemented, and its algorithm set initially validated via “bench” testing using recorded photonics imagery data from two different modalities. In Q1 2013, SMIRF should undergo testing at NUWC Newport, using actual ISIS photonics mast sensor data. We anticipate reaching TRL 6 as a result of this testing.

SMIRF could be ready sooner if additional funding is applied sooner. SMIRF addresses an APB-13 priority capability and such funding would accelerate SMIRF’s maturation.

Following Phase II, further test and evaluation (T&E) via APB-13 funding could culminate in at-sea testing onboard a submarine. We anticipate reaching TRL 7 or TRL 8 as a result of this T&E.

ABOUT THE COMPANY

21st Century Systems, Incorporated (21CSi) conceives, designs, and develops data-driven decision support software products and solutions for government and commercial customers worldwide. Our customers range from the US Navy, Army, and Air Force, to large prime integrators, and from companies engaged in remote health care monitoring technology, to some of the world’s largest casino operators.

Drawing on 15 years of military and commercial decision support software technology research and development, 21CSi provides its customers with innovative, open architecture, rapidly deployable solutions to mission-critical data integration needs.

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