

**AVTEC Maritime Simulator Ice Navigation Upgrade - Phase 1 of 3**      **FY2014 Request: \$375,000**  
**Reference No: 56561**

**AP/AL:** Appropriation

**Project Type:** Information Technology / Systems / Communication

**Category:** Education

**Location:** Seward

**House District:** North Kenai (HD 28)

**Impact House District:** Kenai Areawide (HD 28-30)

**Contact:** Fred Esposito

**Estimated Project Dates:** 07/01/2013 - 06/30/2018

**Contact Phone:** (907)224-6150

**Brief Summary and Statement of Need:**

This project will fund phase one of three to upgrade the Alaska Vocational Technical Center (AVTEC) maritime simulator. These upgrades are necessary to provide ice navigation and arctic operations training to mariners. AVTEC's Maritime Training Center is uniquely poised to offer training operations in a safe environment to prepare mariners who will be operating vessels at or above the Arctic Circle through rapidly changing ice conditions. Currently, mariners must travel to Europe to learn ice navigation.

<b>Funding:</b>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>	<u>Total</u>
Gen Fund	\$375,000	\$350,000	\$325,000				\$1,050,000
<b>Total:</b>	<b>\$375,000</b>	<b>\$350,000</b>	<b>\$325,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,050,000</b>

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input checked="" type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Prior Funding History / Additional Information:**

Sec1 Ch17 SLA2012 P121 L10 SB 160 \$39,000

Sec1 Ch5 SLA2011 P87 L12 SB 46 \$210,000

The \$210,000 appropriation in FY2012 was to upgrade the simulator's outdated projection system. The \$39,000 appropriation in FY2013 will be used to purchase software to update AVTEC's southeast simulations to ensure accuracy for training including harbors, docks, buoys, etc. The new southeast database will range from Sullivan Island in Lynn Canal to Tracy Arm and from Juneau to Sitka.

**Project Description/Justification:**

AVTEC offers maritime training through the Maritime Training Center. The goal of the Maritime Training Center is to promote safe and profitable marine operations by effectively preparing Alaskans for employment as captains and crewmembers in the Alaska maritime industry. As new jobs are created, Americans, and specifically Alaskans, must be trained and ready to qualify for those positions.

As the only arctic state in the union, Alaska is uniquely poised to offer training operations in a safe environment to prepare mariners who will be operating vessels at or above the Arctic Circle through rapidly changing ice conditions. AVTEC has the state's primary training facility for U.S. Coast Guard State of Alaska Capital Project Summary Department of Labor and Workforce Development  
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approved licenses and courses. While AVTEC's full-mission ship's bridge simulator provides a unique and valuable teaching tool, AVTEC's aging simulator cannot run the most current software for simulator exercises. AVTEC needs to upgrade the existing hardware to handle the currently available software to model ice conditions at sea. This project will fund phase one of three to provide enhancements of the AVTEC maritime simulator necessary to train mariners for ice navigation and arctic operations.

AVTEC's full-mission ship bridge simulator features three operational bridges and a navigation lab with desktop computers where up to six students can participate in single-monitor simulations. AVTEC hosts one of the few training sites in the entire country capable of integrating three full-mission bridges into the same exercise, allowing vessels to interact with each other in real time simulations.

Arctic ice navigation training on the maritime simulator at AVTEC's Maritime Training Center will capitalize on the training currently being provided at the center. The International Maritime Organization (IMO) is reviewing regulations that will require ice training on waters above latitude 60 degrees and the use of ice pilots. The United States is a member of IMO and the U.S. Coast Guard follows IMO training standards through the Standards for Training and Certification of Watchstandards (STCW). The Port of Anchorage, Prudhoe Bay, and the Chukchi Sea are all north of 60 degrees latitude.

The internationally compiled Arctic Marine Shipping Assessment (AMSA 2009) predicts dramatic increases of ship and port activities along Alaska's Arctic coast during the next two decades. This ice navigation training will help protect the environment from ice-related accidents, prepare mariners who operate on waters near the ice edge, and enable businesses to take advantage of new opportunities in Arctic and subarctic waters.

### **What is the purpose of the project?**

The purpose of this project is to provide hardware upgrades to AVTEC's full-mission ship bridge simulator. AVTEC's simulators require hardware upgrades in order to handle the most current software available to model ice conditions at sea.

### **Is this a new systems development project? Or, an upgrade or enhancement to existing department capabilities?**

This is an upgrade to the existing maritime simulator.

### **Specifically, what hardware, software, consulting services, or other items will be purchased with this expenditure. Include a line item breakdown.**

Phase one will provide funding for the following upgrades:

- Azipod controls (Azipod is the registered brand name of the ABB Group for their azimuth thruster)
- Very High Frequency (VHF) radios for all bridges
- Software panels for all bridges
- Bridge computers and system servers

- Visual display replacement (replace 50" rear projection TVs with 65" Commercial LCD flat panels for three bridges, floor stands, with associated bridge wood panels and hardware)
- Long-distance high definition video cables

Phase two will include the following upgrades:

- Replace aging hardware including console, controls, and instrumentation in Bridge A
- Navigation lab and visual computer replacement (includes network switch)
- Electronic Chart Display and Information System replacement
- Third instructor station including computer, license, software, dongle (a dongle is a piece of hardware used to make secured software run)

Phase three will include the following upgrades:

- Replace aging hardware including console, controls, and instrumentation in Bridge B and C

All three phases will include a contract for installation support from Kongsberg, as the AVTEC simulator is a Kongsberg system.

**How will service to the public be measurable improved if this project is funded?**

This request will provide Alaskans with a facility capable of training them for arctic maritime jobs. Currently, mariners who want to learn ice navigation techniques must travel to Europe.

**Does project affect the way in which other public agencies will conduct their business?**

No.

**What are the potential out-year cost implications if this project is approved? (Bandwidth requirements, etc.)**

Kongsberg support agreement costs will rise with the installation of the hardware upgrades. Program receipts will support this ongoing operating expense. No other out-year cost implications are known at this time.

**What will happen if the project is not approved?**

If this request is not approved, mariners will need to continue to go Europe to get arctic maritime training. Companies may hire foreign vessel operators due to a lack of trained Alaskans.