BRAND NAME SPECIFICATION
DELL REVERBERATION RACK
PR 1300680284

BACKGROUND

The Weapons Analysis Facility (WAF) at the Naval Undersea Warfare Center, Division Newport (NUWCDIVNPT), Code 85, is the US Navy's only high fidelity real-time torpedo Hardware-in-the-loop (HWIL) simulator supporting all Heavyweight and Lightweight torpedo variants across the full torpedo life cycle. This support begins with Research & Development (R&D), continues through performance assessment Test and Evaluation (T&E), and extends well into the operational, in-water phase.

As part of NUWCDIVNPT purchase requisition number [redacted] and [redacted] in 2013, a market research was conducted to determine the best hardware & software for future HWIL simulations in the WAF. Concurrent Computer Corporation's iHawk workstations were selected as the new standard configuration for HWIL real-time simulation computers along with Dell PowerEdge computer racks to support high-speed computational demands for creating reverberation (ocean environments used during real-time HWIL simulations).

Over the past 8 years, over 40 iHawk computers and 3 Dell reverberation racks have been purchased and added to the HWIL hardware suite in the WAF Lab. Most recently, Dell PowerEdge reverberation racks were purchased under [redacted], [redacted], [redacted] and [redacted].

Under the Advanced Processor Build 5 (APB5) Heavyweight Torpedo Program, the MK48 MOD7 program will be providing updated software to the existing Fleet torpedoes. To provide additional simulation capability to existing WAF weapon racks and support existing simulation software functionality, additional reverberation racks are required. Therefore, a rack of 16 Dell PowerEdge R730 computers and associated hardware is required to support this effort in addition to the iHawk computers being purchased under [redacted]. Without this upgrade, the Navy's desire to maintain a world class Heavyweight Torpedo would be negatively impacted by limiting its ability to quickly test torpedoes in emerging scenarios and in-service fleet support efforts.

REQUIREMENT

Purchase one (1) additional reverberation rack consisting of Dell PowerEdge R730 computers with dual processors, infiniband network switch, dual port adapter cards, cables and associated hardware (see itemized listing) required to build a new APB5 HWIL simulator. This reverberation rack is required to be integrated into the existing HWIL simulator suite and must be 100% compatible with the existing iHawk real-time simulator computers and Dell reverberation racks to avoid any integration problems.

Model Number	Description/Title	QTY	Configuration
A754497	Dell Netshelter 42U Rack	1	See Attached
210-ACXU	Dell PowerEdge R730 Workstations	14	See Attached
A5063202	Infiniband Cables	28	See Attached
A7434211	Infiniband High Speed Switch	1	See Attached
A5634524	ConnectX-3 Dual Port Adapter Cards	14	See Attached

A7284209	APC Power Distribution Unit	1	See Attached
A5216210/A7246236	Unified Fabric Management Tool & Support	14	See Attached
A7017431	5-year Bronze support for Connect-3 Cards	14	See Attached
A5379845	4-year Global Bronze Support – Extended Warranty	28	See Attached
A7103863	5-year Bronze Tech Support for Infiniband SX6036 Switch	1	See Attached
A7246236	5-year Silver Support for Unified Fabric Management (UFM) Standard License	14	See Attached

SOLE MAKE & MODEL JUSTIFICATION

All of the WAF's newest high fidelity simulations are presently supported by Concurrent Computer Corporation's iHawk real-time simulation computers, Dell's PowerEdge R730 reverberation rack and customized interfaces (environment models, afterbody, acoustic). In order to continue to use the existing environment-centric WAF torpedo simulation code and to prevent the need for new software development, Dell PowerEdge R730 computers are required to support the existing simulations with the same interfaces and drivers.

This combination of hardware is critical to the simulator as it allows the simulator to run the software that communicates and controls the Unit Under Test (UUT) hardware. The cost to re-host the simulation on different computers would be excessive and it would cause major delays to all Navy Torpedo programs.

Dell Computer's PowerEdge R730 computers and associated hardware are the only make and model that can satisfy this requirement. Further feasibility studies would be required to determine if existing software/drivers could be converted/configured/integrated onto any alternative hardware. This hardware would also be required to meet debugging, timing, and fidelity requirements. The use of any other make or model of this hardware would require an investment to change the entire WAF HWIL simulation suite. Also, approval would be required from all sponsors currently using the WAF to test torpedo hardware (PMS404, PMS415, ONR, ONI, RAN, FMS). Previous feasibility study cost approximately [redacted] to replace hardware and convert/upgrade the software in the WAF.

In addition, the WAF would be required to obtain system accreditation from Commander Operational Test and Evaluation Force (COTF). This accreditation process would take a substantial amount of time and come at great expense to the government.

Based on the compatibility and cost issues stated above, it is therefore determined that this requirement can only be met by Dell's PowerEdge R730 workstations and associated hardware/software as listed in the attached document. No other make or model will satisfy the current requirement.

RESELLERS

Dell Computer has many resellers and will provide quotes to their "authorized" reseller. It is critical to ensure quotes are obtained from authorized resellers to guarantee OEM hardware, software, support and warranties.

REQUIRING DEPARTMENT

Based on the above, I recommend this acquisition be conducted on a Brand Name Specification basis. I certify the technical data which form the basis of this justification are complete and accurate.

Mike Cantwell

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Engineer, Code 8515 Date