Global Technical Systems

The Common Processing System (CPS) and Advanced COTS Enclosure (ACE)

Distribution Statement A: Approved for public release; distribution is unlimited.

CPS is an adaptable, modular and scalable computing enclosure developed by GTS for NAVSEA to support AEGIS modernization and other Program Acquisition Resource Manager's (PARM's) computing requirements. CPS provides COTS refresh in a fully Open Architecture computing environment (OACE) to achieve robust and cost-effective processing for "Mission Critical" shipboard combat systems. CPS begins deployment in 2012 aboard US Navy DDGs, CGs, and CVNs.

An innovative approach to shock and vibration isolation enables CPS to qualify Grade A Mission Critical requirements while populated with (unhardened) COTS hardware. The CPS cabinet, called the Advanced COTS Enclosure (ACE) is available separately to host other mission critical computing applications. CPS's combination of easily updatable advanced commercial computing, adaptable power and cooling and ability to provide cabinet characterization, offers the following benefits:

- OACE-compliant with highly reliable COTS hardware & software
- Distributed architecture – yields high availability and adds value to net-centric operations
- IBM BCHT BladeCenter provides common infrastructure for processing & network fabric
- Scalable Storage Area – growth independent of processors
- Robust DRM and Performance Monitoring
- Time Services (NTP w/ IRIG-B backup)
- Hot-swappable Lowest Replaceable Units (LRUs)
- Floating inner rack characterized to use subsidiary shock testing and/or COTS standards "as is" without additional qualification testing
- Enables wide-spread use of COTS for effective Technology Insertion/Technology Refresh (TI/TR)
- Single-throw, Left or Right, opening door
- Modular enclosure – fully hatchable
- Scalable & adaptable weight, power & cooling

CPS – The Future of Navy Afloat Computing!

CPS is being deployed aboard DDG, CG, and CVN

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ISO 9001 BUREAU VERITAS Certification

Rev. 02

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CPS & ACE Technical Specifications

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PHYSICAL SPECIFICATIONS:

External:
- 75.5” high
- 28” wide
- 39.5” deep w/ extended rear panel

Internal (isolated):
- 19” rack
- 34U (59.5”) height
- 24” depth
- EIA-310 mounting
- Equipment Payload
  - Up to 925 lbs

ENVIRONMENTAL:

MIL-S-901D heavyweight test, Class I/II:
Internal isolated in all three principal directions at various weight & deck frequencies
- Passed all required MIL-S-901D Grade A shock and MIL-STD-167 vibration tests without waiver

THERMAL:
- Field configurable cooling subsystem
- Water cooled (Heat Exchanger)
- Air cooled (Fans w/ air intake & exhaust)

ELECTRICAL:
- Single or dual power inputs
- Power distribution configurable to meet user requirements
- Power Conversion and Power & Temperature Monitoring and Control

FRONT PANEL CONTROLS:
- Main Power control & indicators
- Normal, Over Temp & Unsafe Temperature indicators
- Audible alarm with indicator and mute
- Elapsed Time Meter (ETM)
- Local and Remote Battleshort control & indicator

CPS & ACE Satisfy Key US Navy Objectives:

✓ Ensures survivability of critical systems employing COTS components

✓ Facilitates rapid insertion of latest technology

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