OCEANA SENSOR

Technology Solutions Network™

ADAPT™

More than data collection and transmission

Embedded, real-time, on board diagnostics for Unmanned Systems

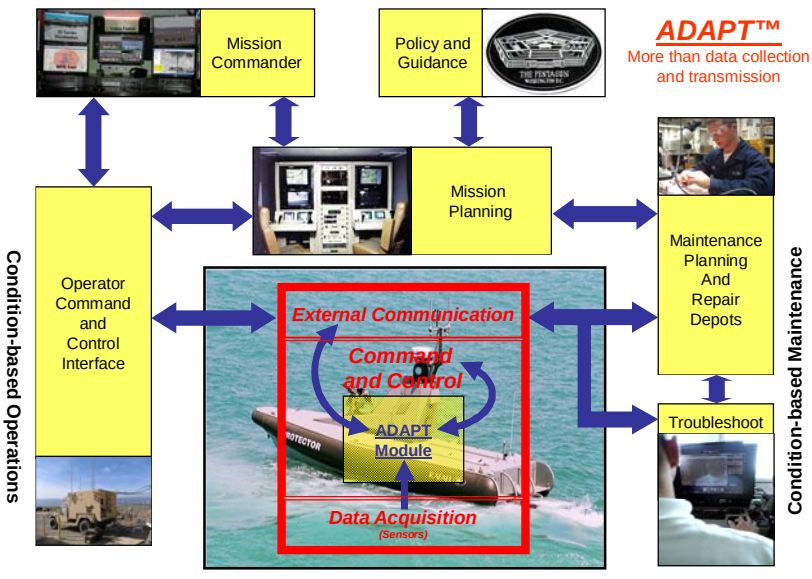
true autonomous mission execution

ANALYZE: Sensor reading from raw measurement, digital signal from control sensors, and digital parameters representing a physical quantity each with related information (date, time, etc) are captured and analyzed in real-time against the normal baseline "profile" of the machine and mission sensor. The embedded historian records and/or transmits trend information for depot level enterprise decision support tools and the embedded state analysis software analyzes multi-parameter data in real-time.

DIAGNOSE: On the machine the embedded state analysis software diagnoses faults against the normal baseline "profile" and rates the current health of the equipment, considering all state information. A resultant diagnostic alert or alarm is transmitted in real-time to the platform Command and Control (C2) module and the embedded historian.

ADJUST: Actionable information of the diagnostic alert or alarm is used by the Unmanned Vehicle Command and Control (C2) in real time (no operator interaction) allowing C2 to react and modify mission requirements based on equipment health. "On-the-fly" mission performance adjustment based on equipment health provides true autonomy of Unmanned Systems.

PROCEED: Unmanned System mission requirement and operations are modified based on diagnostic alerts and alarms and the mission proceeds accordingly. Historian diagnostic and trend data provides depots the identified action requirements and decision support information to reduce downtime and increase mission readiness for future operations.

TECHNOLOGY: ADAPT™ provides an ISO13374 Open System Architecture for Condition-based Maintenance (OSA-CBM) solution on the vehicle. Computer processor, communication, and data interface of the platform infrastructure are used to minimize impact of the hardware/software solution. Can be implemented as a JAUS compatible node, providing or pushing diagnostic health data to the vehicle and/or remote operators. This makes ADAPT™ truly plug and play.

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