PDID-TDAT

TECHNICAL DATA

Technical data to support the Buyer's design development shall be included in the Seller's technical proposal. **If the Seller's proposal is accepted, the data provided will be used as the basis for ship design**. Only **Firm data** can be used for this purpose. **Firm data** is data which represents established design information for the product offered. If some additional design work is required to complete the information, the data is then considered **tentative**. Seller shall indicate for each data element provided if it is firm or tentative data.

INSTRUCTIONS:

Data to be provided if checked as applicable:

A. Maintenance and Operation Access Envelope

☐ 1. A plan view and at least two elevations of the equipment, to scale, depicting the following:

☐ a) Component and parent equipment lift points and any special lifting equipment.

☐ b) Clearance required to remove components from the parent equipment, open access doors, and perform assembly, disassembly, repair and maintenance of the parent equipment and each component.

☐ c) Clearance required around equipment for operating personnel.

☐ d) Location of the center of gravity referenced to mounting holes and/or established coordinates.

☐ e) Outline dimensions.

☐ 2. Special tool requirements.

☐ 3 Other.

B. Lubrication Requirements

☐ 1) Lubricant(s) description.

☐ 2) Lubricant(s) Mil-Spec, Mil Symbol, NATO code number (as applicable).

☐ 3) Type/grade of lubricant(s).

☐ 4) Lubricant(s) quantity per unit.

☐ 5) Part(s) to be lubricated and frequency of lubrication.

C. Mounting Requirements

☐ 1. Location and size of mounting holes dimensioned to an established reference coordinate system.

☐ 2. Mounting bolt sizes and material required.

☐ 3. Mounting foot/plate thickness and material.

☐ 4. Estimated dry and wet weight.

☐ 5. Moments and products of inertia.

☐ 6. Magnitude and direction of equipment reactions at mounting holes, for each of the following:

☐ a) Operating loads.

☐ b) Test loads.

☐ c) Shock loads (applicable only if equipment was qualified by analysis).

☐ 7. The load calculations used to arrive at the reaction shall be submitted if available.

☐ 8. Special requirements, e.g.: requirement for sway bracing, foundation flatness, resilient mounts:

☐ a) Identify all equipment requiring physical alignment to the Shipboard Reference System (Ship Centerline Plane, SCP), Weapon Control Reference Plane (WCRP), Master Reference Plane (MRP), or Own Ship Reference Point (OSRP).

☐ b) Foundation requirements, flatness, azimuth, elevation, rollerpath, and/or cross roll installation requirements with respect to the Ship Centerline Plane and Master Reference Plane.

☐ c) Mechanical battery alignment requirements: azimuth, elevation, rollerpath, and/or cross roll with respect to the Ship Centerline Plane and Weapon Control Reference Plane.

☐ d) Equipment reference point for purpose of measuring the "lever arm" or Cartesian distances between the component and the Own Ship Reference Point.

☐ 9. Other.

D. Mechanical Interfaces

☐ 1. Piping interface connections sizes, types, rating, specification (i.e. flange, union, thread, SAE).

☐ 2. Pipe material required.

☐ 3. Orientation and location of connection points relative to reference coordinate system established for mounting dimensions above.

☐ 4. Design and Operating pressure and temperature.

☐ 5. Requirements to accommodate relative movement (i.e. flexible hoses, expansion joints).

☐ 6. Requirements for compressed air pressure, flow rate, and dew point.

☐ 7 . Cooling water / chilled water requirements (heat load, flow rate, pressure drop, temperature range, required water chemistry).

☐ 8. Heating requirements (heat input required, operating temperature, operating pressure, air flow rate).

☐ 9. Drainage requirements (drip-pan requirements, drainage rates, draining fluids).

☐ 10. Ventilation and AC requirements (heat dissipation to air, air flow rate, operating pressure and temperature).

☐ 11. Requirements for hydraulics.

☐ 12. Pump Performance Data - Pump curve including capacity vs. total head, bhp, efficiency, npsh.

☐ 13. Other mechanical interfaces not included above.

E. Electrical Power and Signal Interfaces

☐ 1. Connected load information (current, power, voltage, frequency, power factor, phasing, etc.).

☐ 2. Motor data (design class, horsepower, service factor, full load efficiency, full load power factor, full load RPM, full load amperage, insulation class, power, frequency, voltage, frame size or dimensions, duty of motor, make and type of motor, number of phases, starting current, starting power factor, starting torque (%), reduced voltage starting current if applicable, etc.).

☐ 3. Envelope dimensions: cable entry or connector arrangement, clearances around equipment, cooling requirements (active, passive, none).

☐ 4. Enclosure degree (dripproof, watertight, etc).

☐ 5. EMI characteristics: shielding, EMP requirements, EMF generated, EMI qualification.

☐ 6. Control, monitoring and instrumentation requirements (remote/local, interlock, logic, etc.).

☐ 7. Communication, I/O, control, monitoring, instrumentation requirements (protocol, signal type, transfer rate, update rate, message size, message structure, etc.).

☐ 8. Protection requirements: fuses, circuit breakers, cutout switches, overloads, grounding, etc.

☐ 9. Cable property information (cable types, designations, number of conductors, shielding, diameter, resistance, conductor size, fiber type, mechanical protection, etc.).

☐ 10. Connector information (connector type, backshell type, jack number, keying, straight, 45º, 90º, cable bend radius, etc.).

☐ 11. Electrical drawings: block diagram, wire connection diagram or list, schematic diagram, connection locations, connection size and type w/ grounding details.

☐ 12. For instruments that require interface with the ship monitoring and control system, provide the following information:

☐ a) Type of sensor.

☐ b) Sensor manufacturer and model number.

☐ c) Sensor function – control or monitoring.

☐ d) Sensor range and units (bar, degrees C, mm, rpm, etc.).

☐ e) Sensor normal operating range.

☐ f) Signal characteristics – analog or discrete.

☐ g) Signal input voltage, if applicable.

☐ h) Signal output.

☐ i) Contact load, if applicable.

☐ 13. Other electrical interfaces not listed above.

F. Computer Software/Hardware Interface

☐ 1. Identify operating system(s) (i.e. NT, Windows, UNIX, etc.) and programs required for system operation, including requirements for equipment which will be interfaced with, and identify those software items which will be supplied.

☐ 2. Identify hardware requirements for equipment to be interfaced with (i.e. memory, processor types, drivers, adapter cards, printer types, repeaters, etc.).

☐ 3. Identify network interfaces requirements (i.e. profibus, ethernet, fiber, etc.).

☐ 4. Identify known incompatibilities.

☐ 5. Identify what standards were used to manage the development, acquisition and testing of software (i.e. IEEE , CMMI).

☐ 6. Identify what tools or software will be used to create or compile delivered software (i.e. integrated development environment tool, file management, compiling tools).

The preferred method of providing the data is by drawings in HPGL format. Indicate on each document if the information is firm or tentative.

Indicate on a copy of this PDID which data will not be available until after detailed design is complete.