Bridge Mate™ by Marine Technologies

Bridge Mate Dynamic Positioning

The Bridge Mate Dynamic Positioning (DP) concept is based on a distributed architecture that emphasizes both redundancy and segregation philosophies. The robust design is important on vessels where a service and system specialist is not at hand 24 hours a day, every day.

In addition to distributed operator stations and DP control computers, the Bridge Mate system has distributed thruster and sensor interface units based on a stand-alone IO unit specially designed for use on DP vessels.

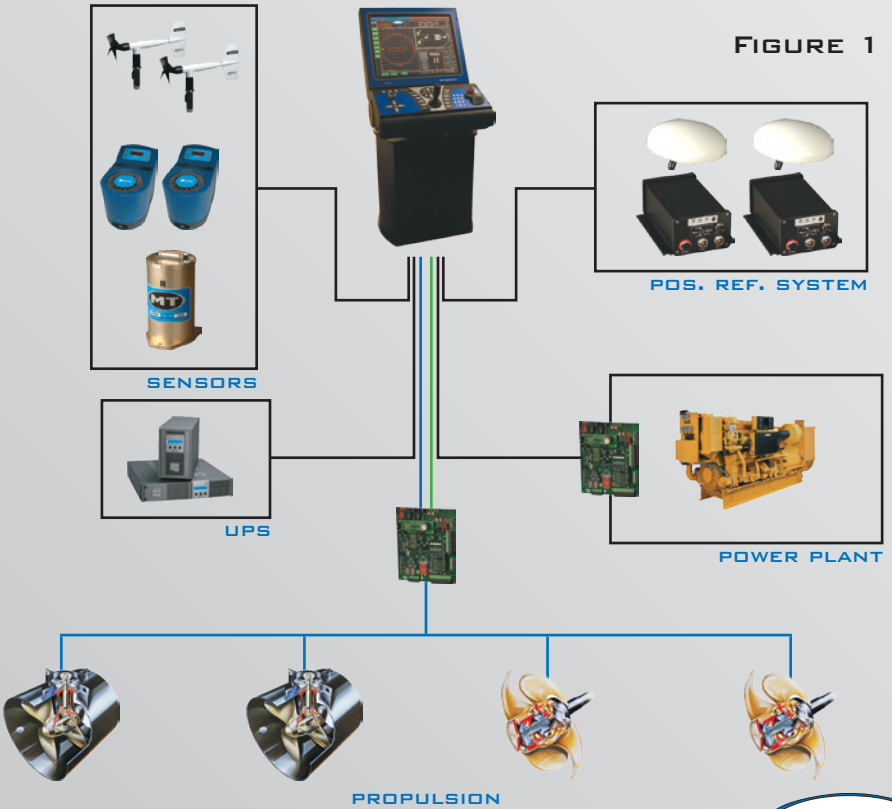
The distributed architecture reduces the cable installation considerably. Each interface unit can be placed close to the thrusters, the reference systems and the sensors to be interfaced. The design of the interface unit makes the Bridge Mate system well suited for retrofit and upgrading within all equipment classes.

Bridge Mate DP 1 System

The Bridge Mate system architecture for a Class 1 system is based on a fully distributed concept as shown in Figure 1. A DP 1 system will have a single control computer, one operator station and separate IO units interfacing the sensors, positioning reference system, power source and thrusters.

An independent joystick system can be interfaced to the Bridge Mate DP system.

Figure 1



For Ship Owners Concerned with Quality and Safety

Bridge Mate DP 2 System

A DP 2 system is composed of the same modules as a DP 1 system, but the number of modules have been increased for redundancy in order to comply with Class 2 rules. A DP 2 system will use three control computers and, typically, two operator stations. Using three control computers makes it possible to perform majority voting between the computers, and to reject a computer should it fail.

The number of IO units is typically much higher on a DP 2 system, as there will be a dedicated IO unit for each set of sensors, each position reference system, power source and each thruster. This configuration is used to provide redundancy at all levels to make sure that any single failure will not result in loss of position.

The compact design and distributed architecture makes the system well suited for retrofit. Upgrading from a DP 1 to a DP 2 system is an easy process since the same hardware modules are used for both types of systems, only different in the number of units used. Figure 2 shows a typical DP 2 configuration, where all the modules are connected via a redundant, dual network.

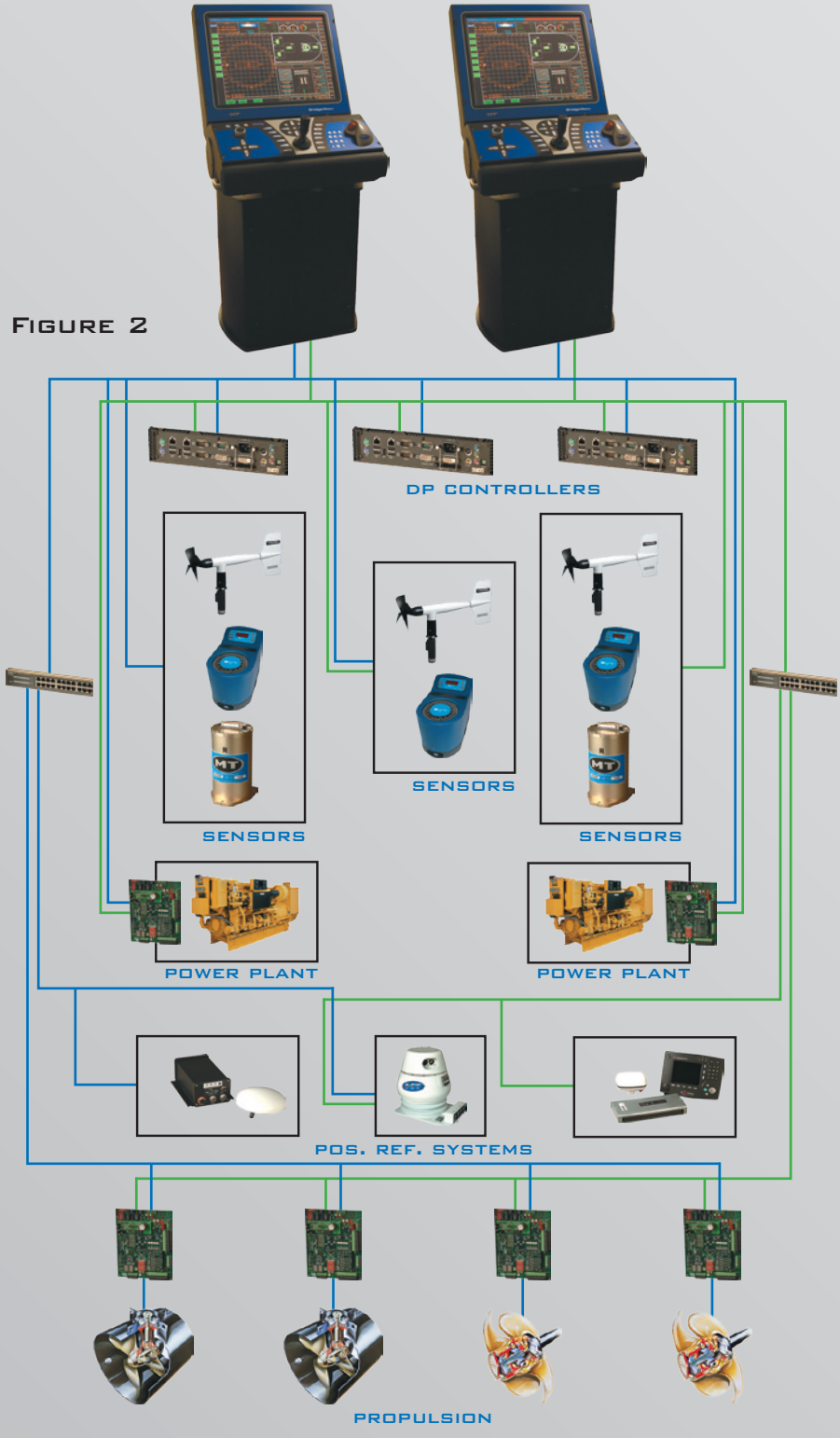


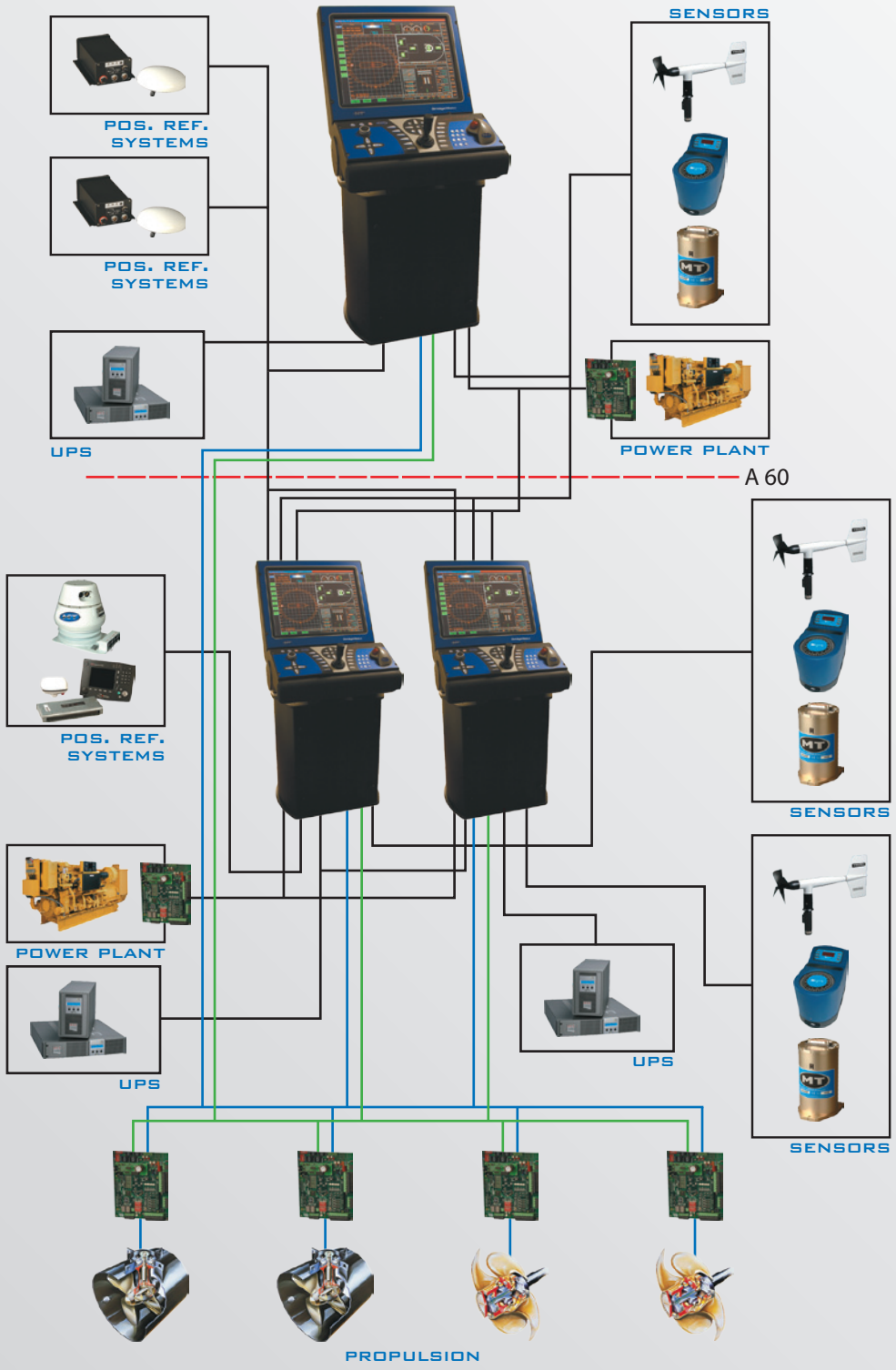
Figure 2

Bridge Mate DP 3 System

A DP 3 system has an extended hardware configuration compared to a DP 2 system. The triple redundant DP controller is still used and a minimum of three operator stations is required. There will also be three IO units to interface components, as opposed to a double set of sensors typically used in a DP 2 configuration. A DP 3 system also needs a physically separate, fire-safe compartment where one control computer, one operator station and one sensor IO unit have to be located in order to comply with Class 3 requirements.

A typical DP 3 configuration is illustrated in Figure 3.

Figure 3



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