



Bridge Mate™

By Marine Technologies, LLC



Bridge Mate Dynamic Positioning Systems

MT Bridge Mate design philosophy is centered around robustness, durability and serviceability. The products have been developed with ship owner and operator needs in mind.

Flexible and abundant I/O capabilities ensure compatibility with any manufacturer of sensors, reference systems, thruster and propulsion. With Ethernet as internal system wiring, installation is easy, fast and safe.

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 I/O units interfacing the sensors, positioning reference system, power source, and thrusters.

An independent joystick system can be interfaced to the Bridge Mate DP system in order to comply with class rules of any of the international class societies.

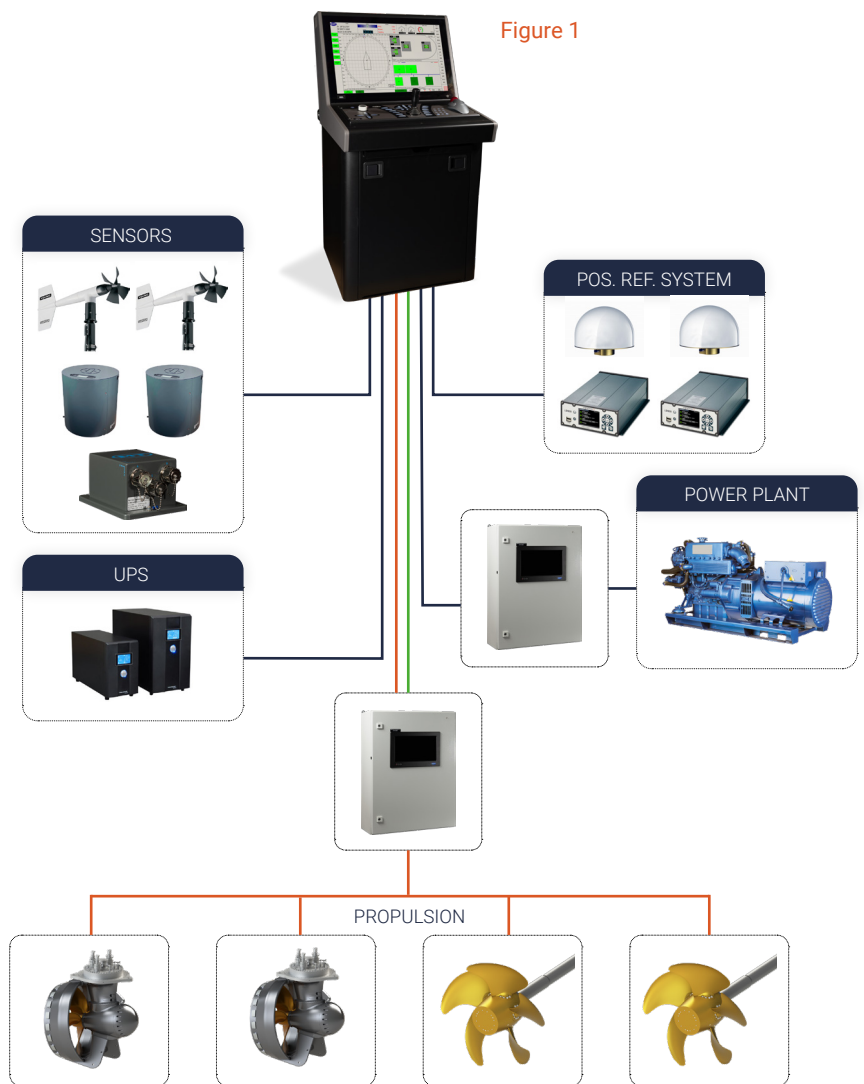


Figure 1

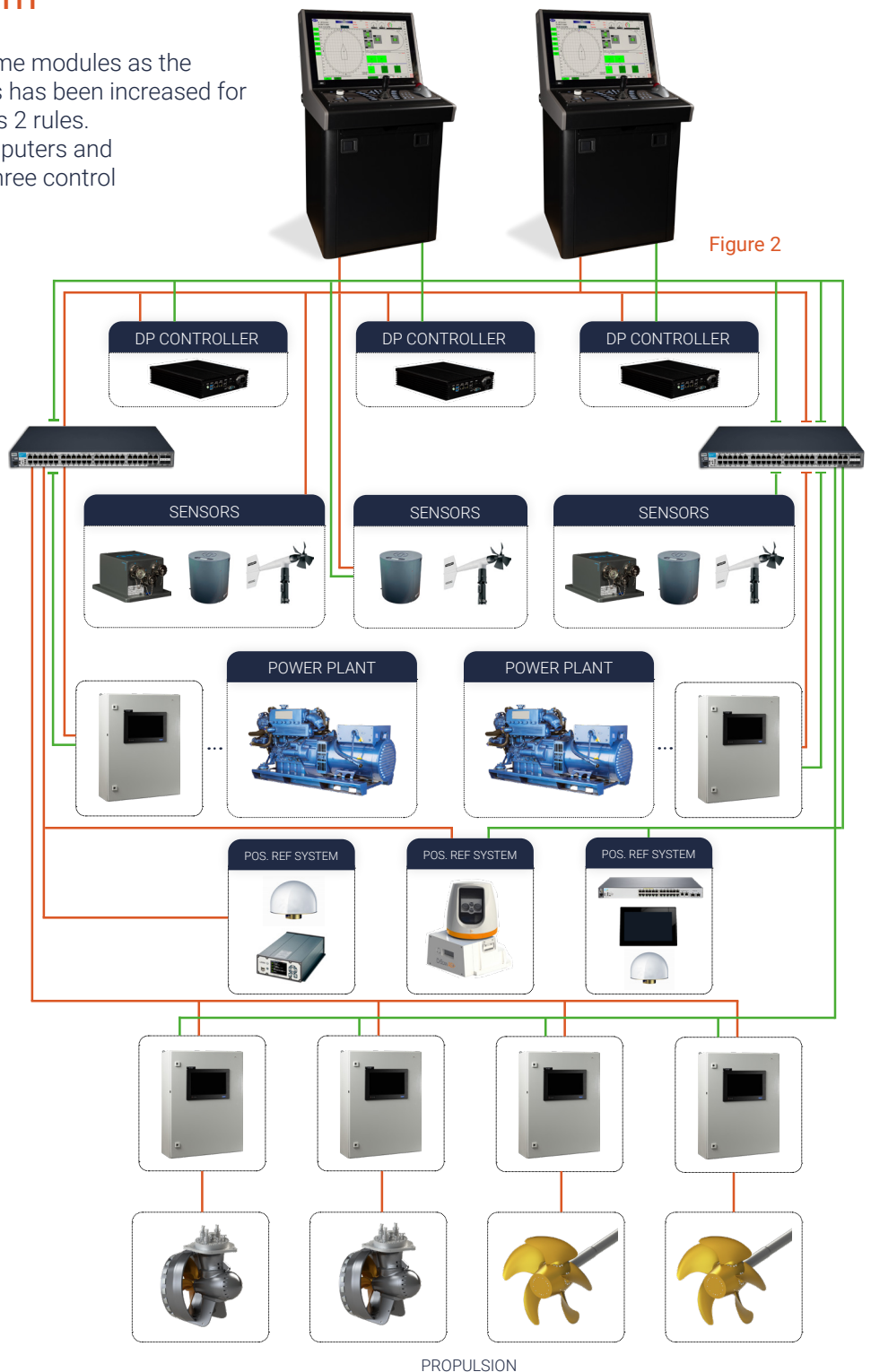


Bridge Mate DP 2 System

The DP 2 system is composed of the same modules as the DP 1 system, but the number of modules has been increased for redundancy in order to comply with Class 2 rules. The DP 2 system uses three control computers and minimum two operator stations. Using three control computers makes it possible to perform majority voting between the computers and to reject a computer or sensor input should it fail.

The number of I/O units is typically much higher on a DP 2 system, as there will be a dedicated I/O unit for each set of sensors, each position reference system, each 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. The only difference is the number of units. Figure 2 shows a typical DP 2 configuration where all the modules are connected via a redundant, dual network.

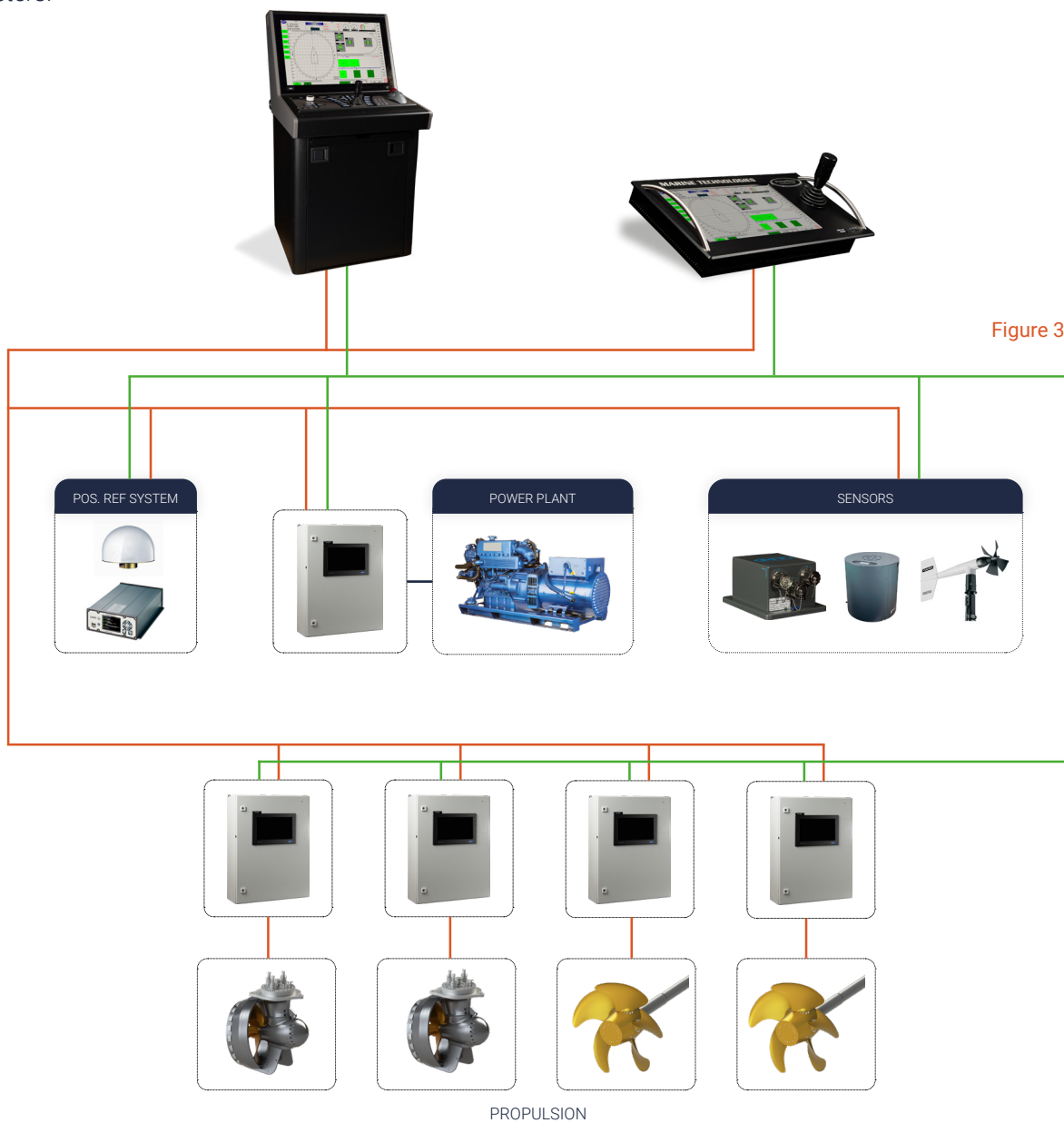


Bridge Mate Joystick System

The Bridge Mate Joystick system can be delivered as a stand-alone, independent system or as an integrated unit that is part of a DP configuration. The two alternatives are illustrated in Figure 4 below, and Figure 5 on the following page.

Alternative 1: Integrated Joystick System

Figure 4 shows an integrated joystick system connected to the redundant DP network. With this configuration the joystick system will be part of the DP network and will use the same sets of signals interfaced there, both for sensors and thrusters.



Alternative 2: Stand-Alone Joystick System

As opposed to the integrated joystick system, the independent joystick system is not part of a DP network. The independent system has its own interface to both thrusters and sensors. All signals are interfaced through the standard I/O unit. The stand alone system is used both as a backup system as part of a DP 1 or higher class vessel, or as a separate system for vessels that do not want full DP capability.

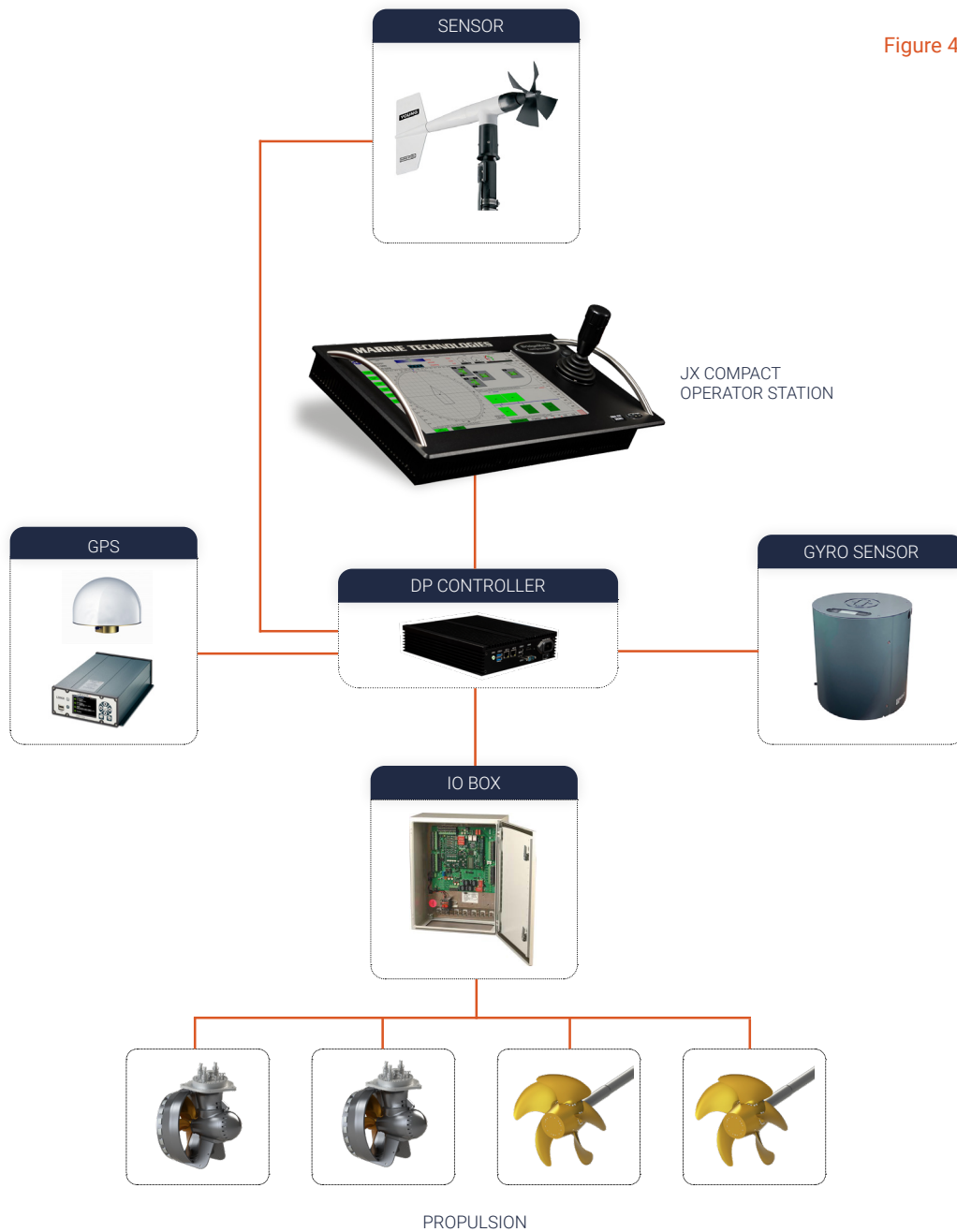


Figure 4



Bridge Mate DP 3 System

The 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 I/O units to interface components, as opposed to a double set of sensors typically used in the DP 2 configuration. The DP 3 system also needs a physically separate, fire-safe compartment where one control computer, one operator station, and one sensor I/O unit have to be located in order to comply with Class 3 requirements.

A typical DP 3 configuration is illustrated in Figure 5.

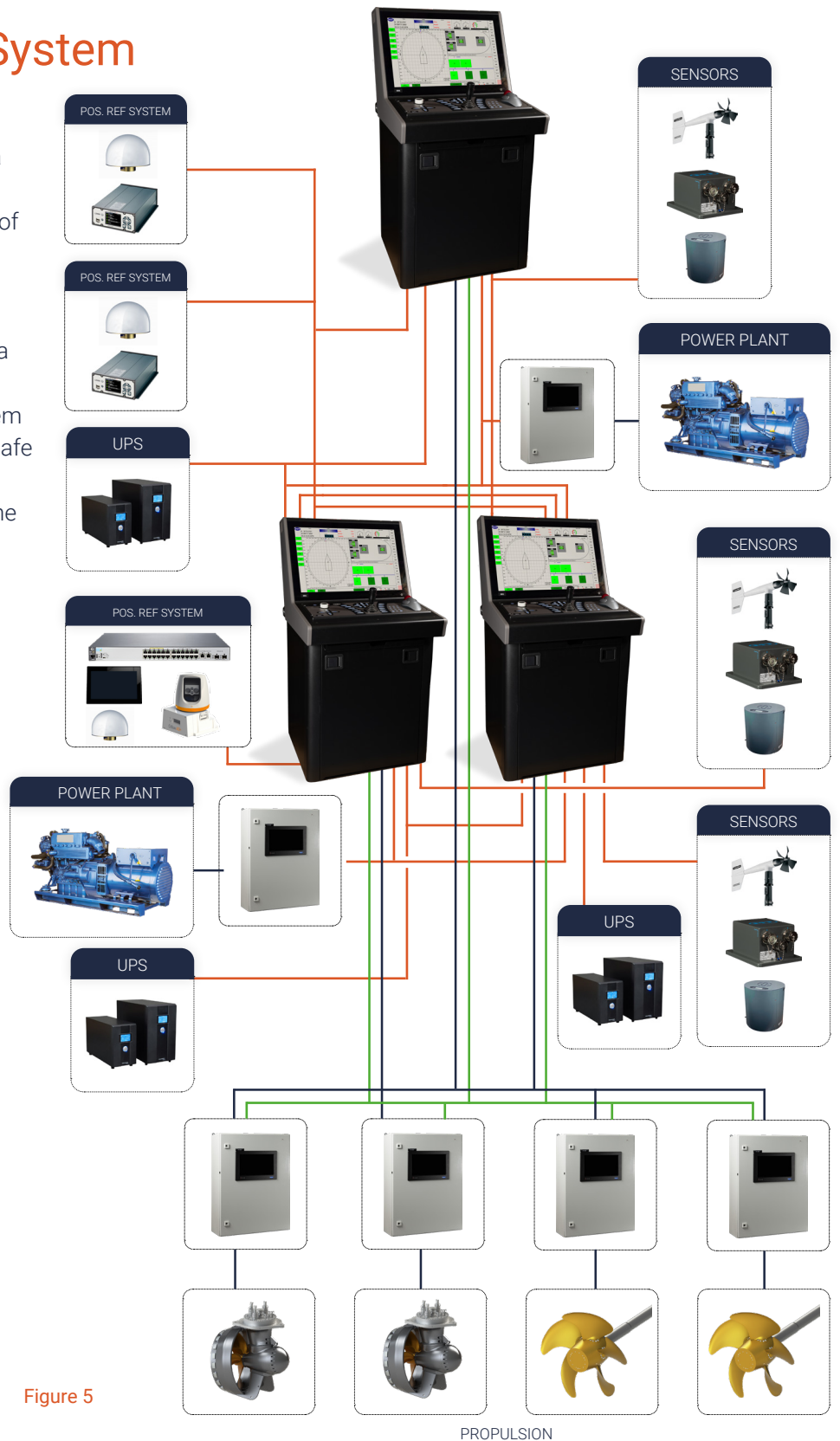


Figure 5

