

Marine & Offshore 船舶和海洋工程

April 2009
2009年4月

Dynamic Positioning Systems 动力定位系统



DP Class Rules

DP 船级社规范

INTRODUCTION 介绍

- **Basic Principles** 基本原理
- **Class Rules** 船级社规范
- **Sensors** 传感器
- **Position Measurement Equipment (PME)** 位置测量装置
- **Control Modes** 控制模式
- **Operator Interface** 操作员界面
- **Basic Hardwired Interface** 基本接口界面

- **What does it mean? 什么意思呢?**

- ✓ **DP0 - Most basic and simple DP (often unclassified)**

- DP0-** 最基本最简单的动力定位（通常不入级）

- ✓ **DP1 - Basic DP but with an Independent Joystick. Note No redundancy is required within the DP but some classes require redundancy in sensors and PMEs**

- DP1-** 有一套独立手柄的基本动力定位。DP系统内无冗余要求，但是有些船级要求传感器和PME系统有冗余。

- ✓ **DP2 - Redundant DP with an Independent Joystick. Note the Vessel must maintain position following any single failure**

- DP2-** 有一套独立操作手柄的冗余DP系统。标明船必须在下述任何信号失效后保持位置。

- ✓ **DP3 - Redundant DP with a simplex DP and with an Independent Joystick. Note the Vessel must maintain position following loss of any compartment due to fire or flood**

- DP3-** 带有一套DP系统和独立操纵手柄的冗余DP系统。标明船必须在任何一个舱起火或进水后保持位置。

- **What does it mean? 什么意思呢?**
 - **DP2 - Redundant DP with an Independent Joystick. Note the Vessel must maintain position following any single failure**

DP2-有一套独立操作手柄的冗余**DP**系统。标明船必须在下述任何信号失效后保持位置。

 - Note this applies to the whole vessel not just the “DP Control Equipment”
应用于整船不仅使用“动力定位控制装置”
 - **DP3 - Redundant DP with a simplex DP and with an Independent Joystick. Note the Vessel must maintain position following loss of any compartment due to fire or flood**

DP3-带有一套**DP**系统和独立操纵手柄的冗余**DP**系统。标明船必须在任何一个舱起火或进水后保持位置。

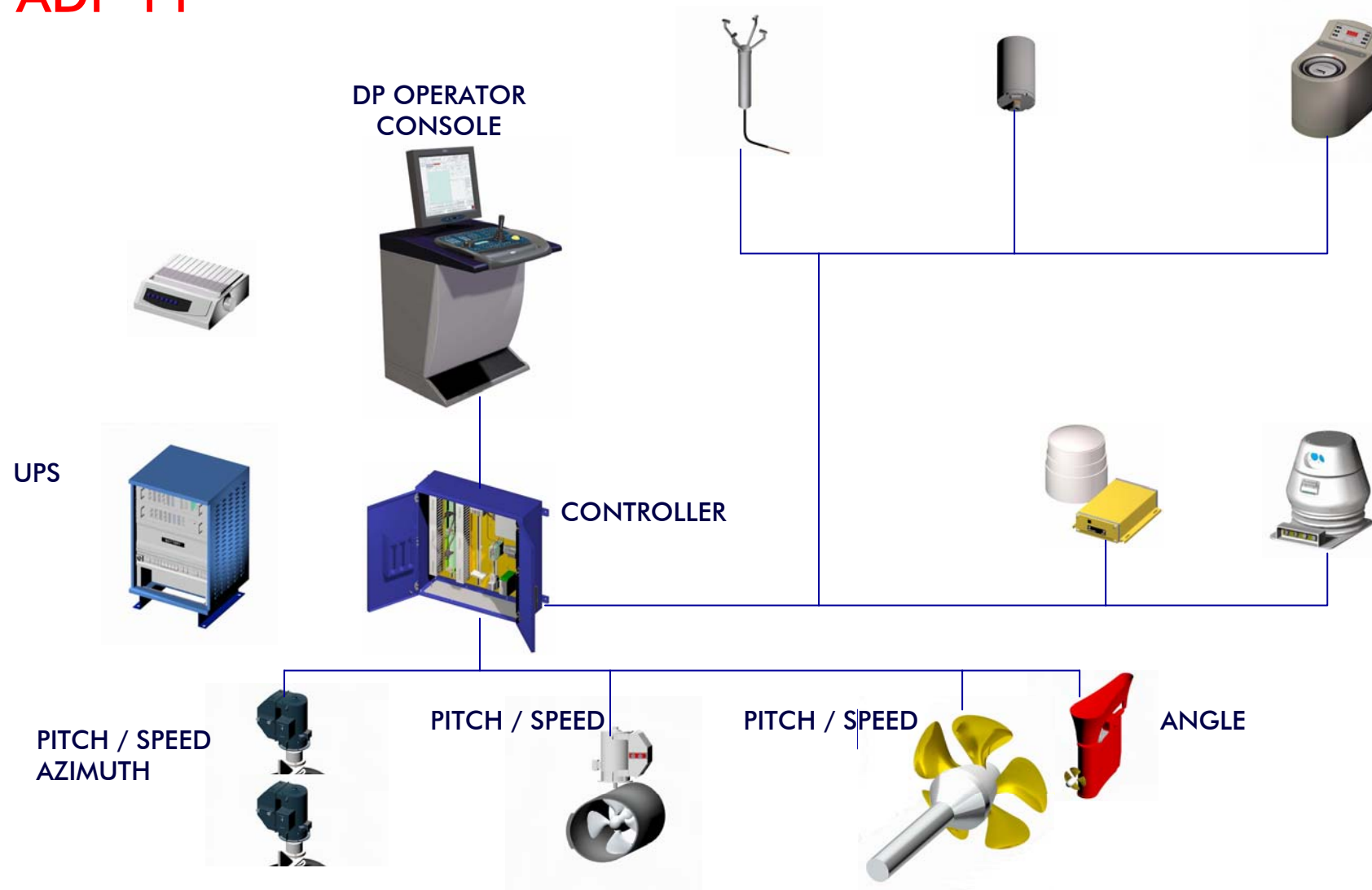
 - Note this also applies to the whole vessel not just the “DP Control Equipment” and this leads to Space and Cable segregation
同样适用于整船不单使用“动力定位控制系统”，要求空间分隔和电缆分隔。

- **What does it mean? 如何理解?**
 - ◆ **Generally for Class 2 and 3 an FMEA is required**
一般来说2级和3级中要求FMEA
 - ◆ **FMEA means Failure Mode Effects Analysis**
FMEA的意思是失效模式影响分析
 - ◆ **This is best used as a design tool! Why? Because class will perform an FMEA test during sea trials and if there is an identified problem at that stage it is much more expensive to correct than at the design stage!**
最好使用作为设计工具！为什么？因为船级要求在试航的时候执行FMEA，如果在这种情况下出问题，更正它比在设计时候更正花费要贵很多！
- **What is it? 这是什么?**
 - ◆ **It is an analysis of each component examining how it could fail and what effect that would have on the vessels ability to hold station with the remaining systems.**
它分析每个部件并检测如果该部件失效，将会对船产生什么样的影响，用剩余有效系统保持现在的状态。

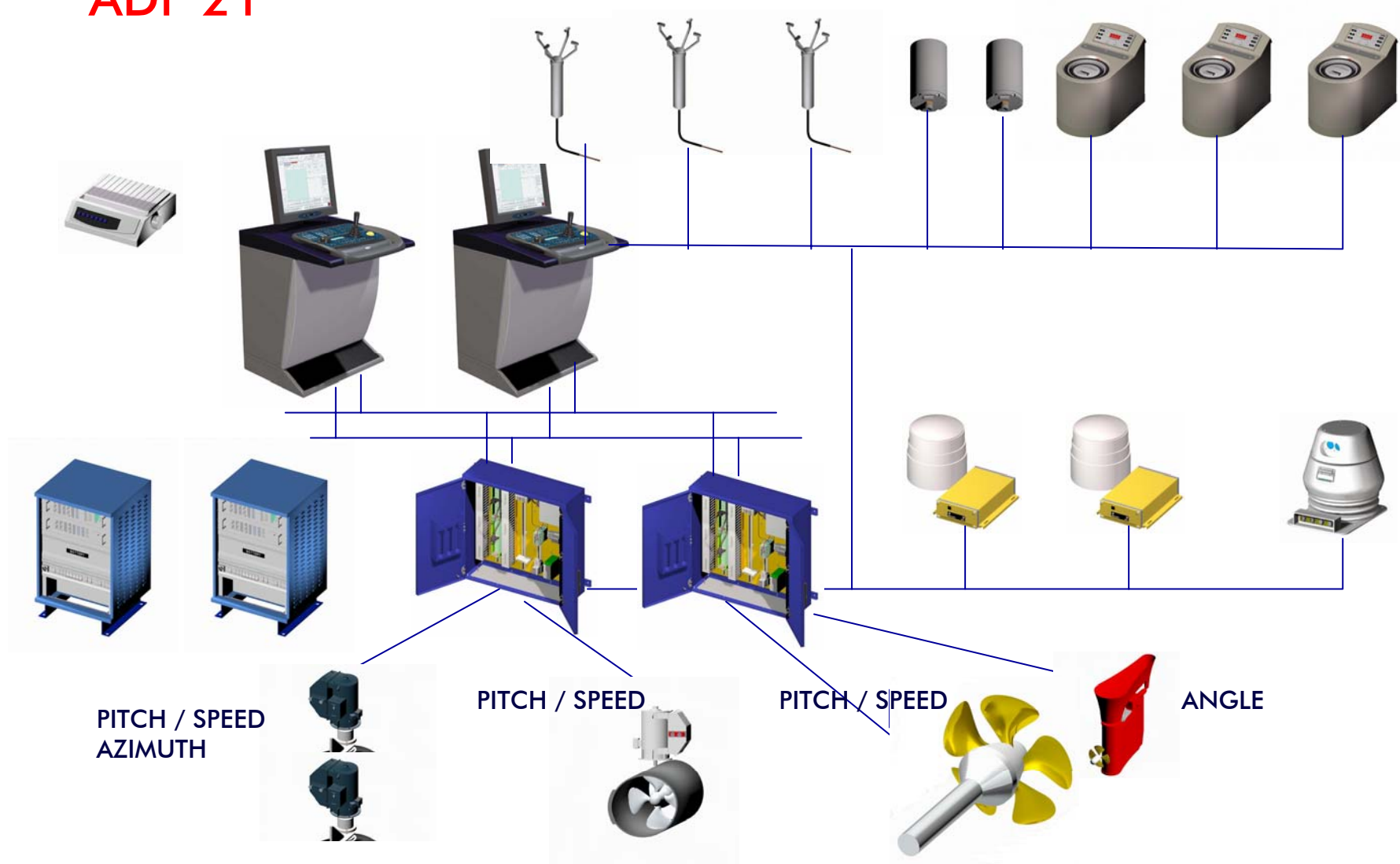
- **The family consists of 家族成员包括:**
 - **AJS 01 Independent Joystick**
 - **ADP 01 A-Series Simplex DP (DP0)**
 - **ADP 11 A-Series Simplex DP (DP1)**
 - **ADP21 A-Series Duplex DP (DP2)**
 - **ADP31 A-Series Triple Voting or Class3 DP**

- **AOT Portable Joystick 便携式操纵手柄**
- **ATW A-Series Taut Wire a系列张紧绳**
- **ATC A-Series Thruster Control (Manual) 推进器控制 (手动)**
- **AVC Integrated Control System (Vessel and Power Systems)
集成控制系统 (船舶和电力系统)**

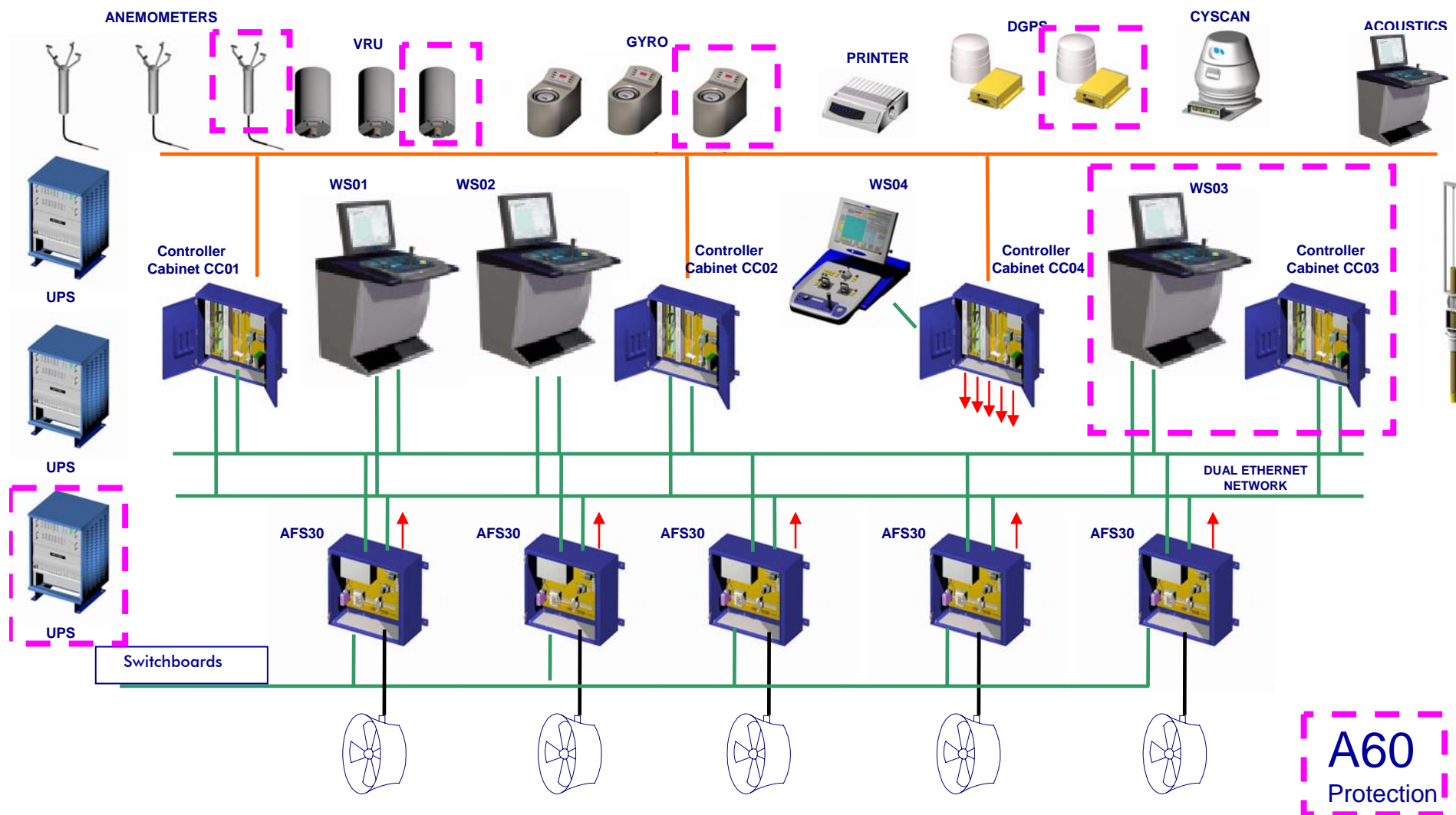
ADP 11



ADP 21



ADP 31





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