

ABSTRACT SUBMISSION –– SOUMISSION DE RESUME

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**proposed topic / sujetproposé:Modular design of the ECU of Main and Standby Lantern**

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ABSTRACT / RESUME:

Main and standby lantern is an important technical application to achieve the unattended lighthouse. The Core of the main and standby lantern is the ECU which controls the luminescence, main and standby conversion, even remote control and so on. In practical applications, when there is a problem with the ECU, it is usually only one of the control unit problems, but because of the functional integration and complexity of the ECU, we usually replace the overall component, which undoubtedly increases the maintenance costs of AtoN lantern.

We propose the modular design method of the ECU. The whole ECU is composed of main lantern control board, standby lantern control board, main lantern drive board, standby lantern drive board, main and standby conversion board and the motherboard. The main lantern control board and the standby lantern control board respectively control the signal output of main and standby lantern, the main lantern driving board and the standby lantern driving board respectively control the power output of main and standby lantern; the main and standby conversion board controls the switching of main and standby lantern and remote control. Each board has it own independent function and does not affect each other. The motherboard performs as a bridge to connect to each board and has a function of expanding interface. When the ECU failure, we only need to replace the fault board, thereby reducing maintenance costs. At the same time, all boards connected with the motherboards by insertion and extraction. This structure can reduce the workload more effective and improve efficiency when in the operation of maintenance.