ABSTRACT

PT. XYZ is an aerospace company that focuses on aircraft design and development, aircraft structure manufacturing, aircraft component production, and as a subcontractor for major global aircraft industries such as Boeing, Airbus, Lockheed Martin, and others. One of PT. XYZ's products is a component for the A350 aircraft. PT. XYZ collaborates with Airbus as a supplier to provide materials for the A350 components for its production process. PT. XYZ's production process utilizes a make-to-order system, ensuring that customer orders are completed on time and meet the specified requirements. Delays in the Panel 3 Fuel Lower component were primarily caused by unintegrated material and information flows, resulting in delayed part deliveries from the fabrication line. The received parts were incomplete due to the lack of prioritization for parts produced on the fabrication line and the absence of an integrated information system regarding the need for unavailable parts. This final project aims to design a web-based electronic kanban control system to minimize production delays for the Panel 3 Fuel Lower part. Kanban, originating from the Japanese word meaning 'signal' or 'visual record,' is a card used when workers require materials or tasks from the previous process. Electronic kanban is an improvement over conventional kanban, utilizing a web-based system and barcode technology to replace the card function for controlling product production. The kanban withdrawal system employs the Constant-Quantity Withdrawal System method. This method is ideal for material withdrawal within a company because it does not require a withdrawal schedule. This allows materials to be withdrawn as needed at any time. Determining the number of kanban cards using the Constant-Quantity Withdrawal System involves several steps: calculating lead time, necessary number of parts during the lead time, safety inventory, and the number of kanban cards. Before calculating the number of kanban cards, supporting data such as working hours and production process time for the components of the Panel 3 Fuel Lower are required. This data is obtained from the company's historical data and interviews with the General Support PMO. In addition to calculating the number of kanban cards, kanban card design, use case diagram design, activity diagram design, entity relationship diagram design, interface design, and website usage mechanisms are also carried

out. This final project designs an electronic kanban that has been verified based on simulation scenarios and validated by the company. Furthermore, an analysis of the results shows that the use of a web-based electronic kanban can minimize or even eliminate delays in the 7 components of the Panel 3 Fuel Lower that previously occurred. Therefore, the objective of this final project, which is to design an electronic kanban to minimize delays in the Panel 3 Fuel Lower part, has been achieved.

Keywords: Panel* 3 *Fuel Lower, Kanban, Electronic Kanban, Constant-Quantity Withdrawal System