

ABSTRACT

DESIGN OF ON-FARM REFERENCE ARCHITECTURE IN THE OIL PALM COMMODITY PLANTATION INDUSTRY

By

Alif Shofa Danutirta

The low effectiveness and control of on-farm business processes, suboptimal data and information management to support decision-making in on-farm business processes, and the limited utilization of supportive applications for activities in the on-farm oil palm commodity plantation, have contributed to the low productivity level in the field. Guidelines and references are needed to optimize the utilization of information technology in managing data and information to support business process implementation without causing losses to the company. Reference architecture is one type of architecture that plays a crucial role in the success of development, standardization, and evolution in several domains. The research method used in the development of this reference architecture employs the Tree of Research, which focuses on a bottom-up approach starting from problem formulation, goal setting, contextual setting definition, research content arrangement, and research contribution determination. Data collection for this study involves observation and interviews with selected informants based on predefined criteria. The objective of this research is to formulate a reference architecture dedicated to the on-farm oil palm commodity plantation industry using approaches from Frameworkx, BIAN Reference Architecture, and the TOGAF Reference Model. The outcome of this study will be an on-farm reference architecture artifact for the oil palm commodity plantation industry, consisting of integrated models, diagrams, and matrices, serving as guidelines and references for business, data, and application standardization in the on-farm oil palm commodity plantation industry. This approach aims to provide a solution to the research problem in the management of on-farm oil palm plantations concerning business, data, and application aspects.

Keywords: Information Technology, Reference Architecture, Agriculture, Palm Oil, Frameworkx, TOGAF Reference Model