

ABSTRACT

The smart environment represents a key domain in the advancement of smart city, emphasizing the strategic utilization of information technology to support sustainable environmental management. As one of Indonesia's major urban centers, Bandung has initiated its transformation toward a smart city. However, it continues to face significant challenges due to the absence of a comprehensive roadmap and standardized masterplan. This study aims to design an information technology architecture masterplan for the smart environment domain in Bandung using the Smart City Architecture Development Framework (SCADEF). The research methodology involves the identification of existing architectural conditions, gap analysis between current and desired states, and the formulation of a transition architecture across four core domains: business, data, application, and technology. The architectural artifacts were evaluated through expert judgement to ensure relevance and feasibility. The outcomes of this study include a set of architectural models that represent the existing environment, the envisioned target state, and the transitional stages required to bridge the gap. In addition, a structured roadmap and long-term masterplan were developed to provide strategic direction for the city's environmental initiatives. The proposed design is expected to serve as a strategic reference for local policymakers in guiding the integrated, resource-efficient, and sustainable development of Bandung's smart environment initiatives.

Keyword: smart environment, IT architecture, smart city, SCADEF, digital transformation, Bandung Cit