

ABSTRACT

XYZ Company, as part of a State-Owned Enterprise (SOE), faces challenges in employee data management due to the lack of optimal integration between external applications and the SAP S/4HANA system. The existing manual processes lead to inefficiencies, delays, and potential data inconsistencies. Therefore, this research was conducted to design and analyze a communication protocol based on Remote Function Call (RFC) that enables automated and real-time integration of employee data between non-SAP applications and SAP S/4HANA.

This research adopts the SAP Activate methodology, which consists of several phases: Discover, Prepare, Explore, and Realize. In the Discover phase, business needs analysis and identification of processes requiring integration were conducted. The Prepare phase involved business process mapping and preparing the necessary technical infrastructure. The Explore phase focused on designing the communication architecture, which included creating a solution architecture diagram and developing RFCs as the communication mechanism between external applications and SAP. Finally, in the Realize phase, the implementation and testing of the designed solution were carried out.

The test results indicate that the web service developed through RFC functions effectively, allowing external applications to communicate with SAP S/4HANA. Testing was conducted using unit testing to ensure that each function module operates according to specifications, and integration testing using SOAP UI to evaluate the interoperability between the web service and SAP S/4HANA. The evaluation results demonstrate increased business process efficiency by reducing employee data processing time, improving data accuracy stored in SAP S/4HANA, and minimizing operational costs.

The conclusion of this research is that the implementation of an RFC-based communication protocol in SAP S/4HANA can enhance the company's operational efficiency by eliminating data communication barriers between applications. The benefits of this research include providing a conceptual

overview and communication system architecture, assisting in feasibility analysis and business process impact evaluation, establishing standard documentation as an implementation reference, and supporting concept validation and proof of concept (PoC). This research is expected to serve as a reference for implementing similar solutions in companies facing challenges in integrating their information systems.

Keywords – communication protocol, SAP S/4HANA, remote function call, data integration, business efficiency