

Interoperability for smart home environment using web services.

ABSTRACT

Recent advances in computing and communication technologies paved the growth for applications and devices in smart home environment. A typical smart home is highly characterized by heterogeneity elements that need to perform joint execution of tasks in an efficient manner. Although there are huge growth of services, applications and devices in smart home environment, the interoperability elements still seems ambiguous. Being a distributed architecture, smart home environment needs certain degree of interoperability to manage sub-systems comprising of different platforms. Generally, these sub-systems are developed in isolation and consist of different operating system and tier of services. There is need for a cross-platform interoperability that could make the sub-systems 'talk' each other and operate in an interoperable fashion within smart home environment. Web Services seems to be the emerging technology that could lead the way in providing greater interoperability. In this paper we describe the potential of Web Services technology using Simple Object Access Protocol (SOAP) in addressing the interoperability requirements for smart home environment. The SOAP protocol provides data exchange mechanism as well as optimized performance for interoperation among sub-systems residing in smart home environment. The proposed system performance is evaluated to demonstrate a complete, bi-directional real-time management of sub-systems in smart home environment.

Keyword: Interoperability; Simple Object Access protocol; Web Services