

# Ayushman: A Wireless Sensor Network Based Health Monitoring Infrastructure and Testbed

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With a rapidly aging population, automated health monitoring systems, provide an effective means of reducing the resulting healthcare professional shortage. To this end, we at the IMPACT lab at Arizona State University are developing Ayushman, a sensor network based health monitoring infrastructure and testbed<sup>1</sup>. Ayushman provides a medical monitoring system that is dependable, energy-efficient, secure and collects real-time health data in diverse scenarios, from home based monitoring to disaster relief. Further, Ayushman is also designed to be a testbed which allow researchers to test their communication protocols and systems in a realistic environment. Fig.1 presents Ayushman's archi-

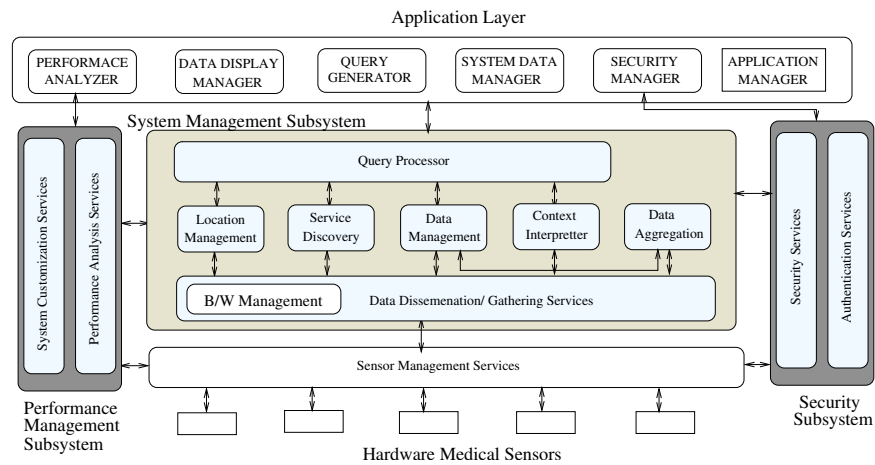


Fig. 1. Ayushman: Architecture

ture, which is organized as a collection of services. Apart from the *application layer* and *sensor management service* (which provides an abstraction of the medical sensors), Ayushman has three main components- *system management subsystem* which provides health monitoring services, *performance management subsystem* which monitors and controls the entire system for testing purposes and *security sublayer* which provides security and authentication services to all. So far we have implemented the query processor, data storage and gathering services and are currently working on resource management and reliability issues.

<sup>1</sup> Ayushman Project - <http://shamir.eas.asu.edu/~mcn/Ayushman.html>