

## Medicare-Grid: A Grid Based E-Health System

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### Abstract

The evolution of information technology over the last decade has brought opportunities to improvements in the state of art of medical services. One scenario is that patient's digital health record can easily be shared among hospitals and medical centers via internet, enabling the examination performed in one location while clinical diagnosis by physicians in another location. In this paper, we propose a Medicare-Grid — a novel grid-based Ehealth system to ease the process of retrieving and exchanging personal health data among hospitals and medical centers. Grid and peer-to-peer technologies have been used to integrate computing and storage resources provided by hospitals, as also to develop an Electronic Health Record (EHR) center to store and share EHRs among these locations. The EHR Center and hospitals together are entitled Medicare-Grid platform, and based on this platform, we have developed three Medicare applications to improve the in-hospital medical services, which include (1) a data warehouse for medical decision support system, (2) a RFID-based mobile monitoring system, and (3) a wearable physiological signal measurement system that monitors health condition of a patient. We have developed a system prototype using ultimate hardware resources and open source software systems to simulate a real scenario as described above. We demonstrate that the idea proposed in the project is feasible, possible to be implemented and applicable to real world.

Keyword : Grid, E-health, P2P, data mining, RFID, wearable measuring system