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MobiCon: Next Generation Mobile and Ubiquitous Platforms

(Source: Computing Community Consortium)

A Mobile Context Monitoring Platform for Sensor-rich Dynamic Environments.

The research driven technology presents MobiCon, a middleware platform for developing human activity applications in an energy efficient manner. Such application infer the user's patterns of activity by processing measurements streams collected by sensors placed on or around the user's body which are connected by a personal area network (PAN).

The main insight behind MobiCon is that instead of sensing all the sensors all the time, the system determines the sensors that are required by the union of applications that are currently active.

MobiCon supports writing human activity applications in the form of predicates (e.g. "location == 'library') connected by logic operators that are supposed to run for a specified duration of time. MobiCon decomposes these high-level programs into a set of requests to acquire sensor streams whose 'values' are periodically re-evaluated.

MobiCon is an initial attempt to provide an active resource orchestration system, recognizing the PAN-scale sensor-rich mobile platform as a common underlying computing platform. Recently, many systems have been proposed for effective resource management of mobile devices and sensors comprising PAN. They are mostly designed to manage resources, especially battery in most cases, for applications on a single computing device. Such device-centric resource management, however, can hardly be utilized in our target environment, in which multiple sensors and a mobile device cooperatively serve multiple applications.

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