# Keynote Speech 2:

# Paradigm for Development of Middleware for Wireless Networks

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## Abstract

With the growth of embedded systems, the dimension of Ubiquitous Computing has drastically changed. It is particularly so with the proliferation of wireless ad-hoc networks and sensor networks for a wide range applications ranging from home applications to strategic applications. Such application scenarios consist of a large number of heterogeneous systems in general. The demand on programming models have increased due to the need of distributed control over geographically distributed locations. The programming models need to address the issues like safety criticality of systems, resource awareness, mobility of the systems, location awareness, flexibility based on resources and circumstances etc. Further more, such applications consist of several hierarchical layers wherein services at the lower level are common across applications. This demands the programming models to support the development of middleware that permits the user to concentrate on the layer of his concern for the specification and development without worrying about the other layers or concerns. Recently, we have arrived at an aspect oriented programming paradigm that would support such a development. This has been based on the earlier work on the development models for synchronous and asynchronous systems for complex reactive systems. In this talk, we shall explore the underlying issues, describe the new paradigm and illustrate applications of the paradigm for spatial programming, sensor networks etc.