

## **Adaptive Technologies**

Smart Spaces offer a vision of computing systems that are embedded in the fabric of everyday life. Smart Space systems will therefore become an increasingly invisible part of our everyday lives, providing us with seamless access to information and communications regardless of our location. Human interaction with smart spaces will become a more natural affair, with user needs being inferred using inputs from multi-modal sensors and context information. In addition, if people are able to interact with any smart space environment they visit, we must allow the owners of the local resources to limit their usage according to their security, resource allocation or charging policies.

Smart Space environments must adapt dynamically therefore to a combination of user needs, the policies of resource owners, the current usage context and the capabilities of surrounding services.

There are many areas of research that have been seeking to develop adaptive techniques. Two areas in particular have been identified by the Mzones team as potentially suited to contributing towards the solutions needed within Smart Spaces. For these two areas the state of the art has been explored and the results are provided here. First the state of the art in adaptive hypermedia in eLearning domain is presented. This area was surveyed as it is our belief that the research undertaken to date in this domain could contribute to the personalisation solutions required in many facets of Smart Space design. Secondly, the state of the art in policy techniques is provided. Policies represent an important existing approach to providing runtime flexibility in the operation of management components and systems and therefore are a strong candidate