

## Reading List: Developing Ubiquitous Computing Devices

Albrecht Schmidt and Thomas Kubitzka  
{albrecht.schmidt, thomas.kubitzka}@vis.uni-stuttgart.de  
University of Stuttgart, Germany

The reading list comprises 4 areas that are relevant to our course. We expect that you have come across the original paper by Marc Weiser, introducing the concept of *ubiquitous computing* [1].

In the first part we have included papers that provide an overview of *interaction concepts* that are relevant in the context of ubiquitous computing. In particular this is *tangible interaction* [2a] [2b], *reality based interaction* [3], *embedded interaction* [4]. The concept of *informative art* [5] is introduced as well as the notion of persuasive technologies [16]. This part is concluded with an overview of interaction with computers in the 21<sup>st</sup> century [6]. In the second part we have included a paper on how to create *smart devices* [7], which gives an overview of *sensors* that may be useful for creating novel and reactive devices. In [8] sensing is extended to *context* and *context-awareness*. In the third part we introduce the *.NET Gadgeteer platform* [9] and show some trends in the development of ubiquitous computing devices: how can we create new products once we can *fabricate things* [10] and *enclosures* [10b] and how ubicomp technologies enable new devices and devices concepts [11].

The final part provides some ideas for application scenarios that we plan to assess during the course. In [12] a concept of how to change a bed into a communication media is presented and in [13] a social alarm clock is presented. A recent study [14] shows the impact of technology on communication and in [15] an overview of novel alarm clocks and *sleep monitoring* devices is given.

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**Appendix: .NET Gadgeteer Links (optional)**

- Home website of the .NET Gadgeteer project  
<http://www.netmf.com/gadgeteer/>
- Starting point for the hardware we use in the workshop (FEZ Spider Kit), follow steps 1-3 (choose VS C# Express 2010) to setup your development environment for the workshop in advance (only for MS Windows)  
<http://www.ghielectronics.com/support/.net-micro-framework>
- MSDN Gadgeteer Blog – What is going on?!  
[http://blogs.msdn.com/b/net\\_gadgeteer/](http://blogs.msdn.com/b/net_gadgeteer/)
- Get an overview of available Hardware! Think about what you always wanted to build!  
<http://gadgeteering.net/hardware>
- Very useful Gadgeteer hints by Steven Johnston  
<http://stevenjohnston.co.uk/category/net-gadgeteer/>
- Various interesting Gadgeteer projects  
<http://mikedodaro.net/>
- First Gadgeteer Project Video by Nic Villar  
<http://www.ghielectronics.com/docs/43/first-gadgeteer-project>