# "Digitales Osmantinum" - a location based museum guide system

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## Introduction

The reconstructed Wielandgut in Ossmannstedt is an authentic place that reflects life and work of the German poet Christoph Martin Wieland. With a collection of artifacts and their arrangement the museum in the Wielandgut communicates the aura of the place by keeping it free of additional information pieces and explanatory materials. Nevertheless, for a complete experience you would need a profound knowledge of the artifacts, the place itself and the sometimes hidden relationships between them.

In the project "Digitales Osmantinum" a museum guide system has been developed that tries to get visitors involved into the life and work of Wieland. It enables them to experience the aura of the place and to collect information at the same time – even for laities and without spoiling the historical place with high-tech gadgetry.

## Point of departure

While digital media in general offer the possibility to introduce an additional layer besides the physical world experience, the high-tech appeal of information terminals would risk to visually break apart the auratic environment. Therefore a PDA (personal digital assistant) -based approach

has been developed that incorporates mobile computers fitted within non-technical casings, an invisible localization and storage system as well as a staged interaction concept for different user groups.

## From concept to interface

Visitors of the museum site in the Wielandgut Ossmannstedt where identified to belong to three more or less distinct groups:

- Either they show a general interest into the life and work of Christoph Martin Wieland but are unfamiliar with it, or
- they are already accustomed to it and want to gain a deeper insight or
- they are experts of Wieland's life and work and want to experience the authentic place itself.

While the content of the museum guide system is in general audio based in order not to distract visitors from the visual experience of the surrounding environment, the distinction between the visitor groups is not predefined but results from different uses of the system.

The interface of the PDA guide system is not only a technical interface to the different functions




**Fig. 1 & 2 :** View of manor Ossmanstedt and screen design of the system.

of the guide, but also the connection between the visitor and the virtual connotation of the environment. Therefore the inter-action design of the interface proved to be an integral part of the overall system.

In order to enable each of the three hypothetical visitor groups to make use of the system, a staged interaction concept has been developed that offers powerful, yet simple context aware inter-action for visitors with limited technical experience.
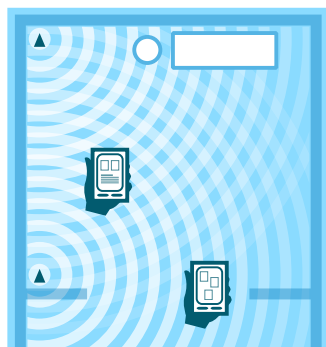
## Interaction Concept

The interaction concept of the museum guide incorporates the actual physical position of the visitor within the museum environment. The interface therefore reflects virtually the context defined by the physical space and the artifacts situated within.
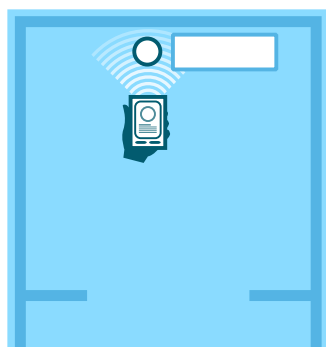
Central to this approach is the concept of a location based interface.

As shown in figure 2, the visual display of the interface alters accordingly to the movement of the user in the room. Depending on the actual position, different topics are displayed. These are for example topics of broader interest that are not solely connected to a single physical object but allow to introduce more abstract concepts, as in our case phases of Wieland's life and contemporary events in history.



**Fig.2**: Alteration of content depend-ing on the users position in the room using a WLAN-setup.
**Fig.3**: Single selection of specific artefacts through RFID-tags.

Another approach is again connected to the location based set-up and displays lists of selected objects that are in sight from the position of the user. To a certain extend this allows for a simple on-screen selection (see figure 4 and 5).
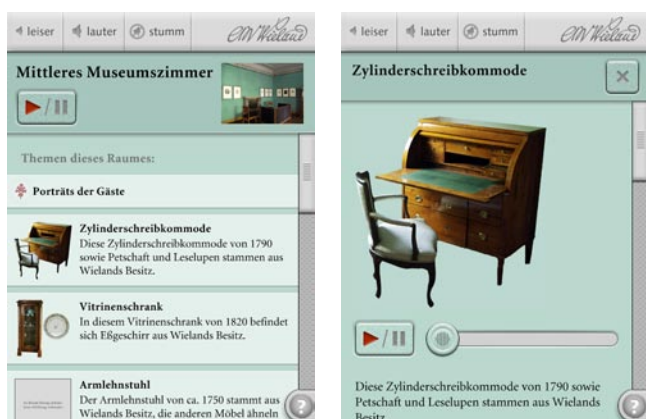


**Fig. 4 & 5**: Screen design displaying list of objects and single object with detail information.

In case of a huge number of objects, the list grows too large to be handy in order to search for a single object. Therefore RFID-Tags have been integrated into the environment enabling a selection by pointing the PDA-device towards tagged artifacts (see figure 3). By this even large collections of objects can be assessed, for example books in the library room.

This unique combination of virtual and real world, location based interaction turns the museums space into a seamless and saturated information map. Equipped with a PDA the visitor is asked to physically explore this virtual enriched set-up. Even so, the experience of the location can span from an undisturbed au-thentic environment to a full information guiding system about the place and its former inhabitant.

## Technical Setup

Besides the PDA component and computer terminals in a sep-arate information room the technical setup is invisible to the visitor and thus leaves the auratic moment of the environment untouched.

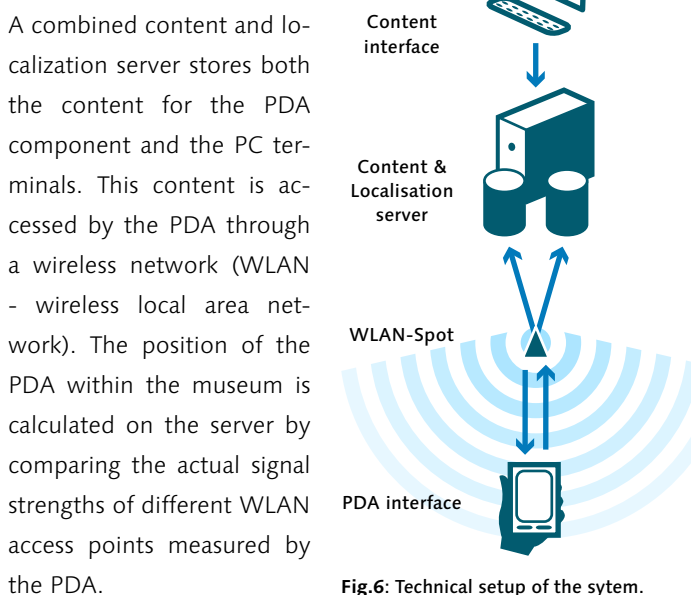Figure 6 displays an over-view of the technical setup: A combined content and lo-calization server stores both the content for the PDA component and the PC ter-minals. This content is ac-cessed by the PDA through a wireless network (WLAN - wireless local area net-work). The position of the PDA within the museum is calculated on the server by comparing the actual signal strengths of different WLAN access points measured by the PDA.



**Fig.6**: Technical setup of the sytem.

As part of the system a technical interface has been developed to enable the creation of new content or the update and alterna-tion of the existing one.

The digital museum guide "Digitales Osmantinum" is in use since the reopening of the Wielandgut Ossmannstedt in June 2005.

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