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Janett Mohnke
University of Applied Sciences Wildau, jmohnke@th-wildau.de

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iCAMPUS GOES LIBRARY – ADVANTAGES OF USING A MULTIMEDIA GUIDE IN A LIBRARY

Janett Mohnke and Frank Seeliger

TH Wildau – University of Applied Sciences
Bahnhofstrasse 1
15745 Wildau
Germany
{jmohnke|fseeliger@th-wildau.de}

Abstract

At University of Applied Sciences Wildau in Germany students have developed and evaluated a mobile and multilingual on-campus-information system, called *iCampus Wildau*. With the help of maps, audio tracks, and 360°- pictures a user is guided across campus and provided with current information about visible and invisible services and options. Because of its modular and general approach, the guide has been used for several, quite different purposes. One very successful application case has been a multimedia guide for the university library. This has been used for introducing new library users into using the library services, providing information about the special architecture of the library building, or even as a multimedia guide for one of the many exhibitions that find their place in the library.

In this paper, we will explain the features of this application, provide some practical experiences, and show how it can easily be adapted to any library (or campus).

Keywords: mobile information system, multimedia guide, augmented reality, distributed system, RFID-based orientation finder

Introduction

Nowadays, self-guided audio tours are a common companion for visitors of museums, exhibitions and even on city tours worldwide. Newer technologies and devices, like Apple's iPod Touch, call for further developments. So, multimedia guides start to capture the field and to substitute classical audio guides. Although an audio guide might still be the first choice of curators of any museum to avoid distractions of a visitor from the actual exhibits, when it comes to other applications, multimedia guides can be more than helpful [1,2,5,6]. At our university, students have developed such a multimedia guide, called *iCampus Wildau*.



Figure 1: iCampus Wildau - Start screen in German: Let's start exploring!

With the help of maps, audio tracks, and 360°- pictures a user is guided across campus and provided with current information about visible and invisible services and options. A web portal allows adding any content useful for a visitor. So, there is the possibility to use the guide to deliver permanent information about the facilities of different university domains as well as non-permanent information about or for special events or exhibitions. The content can be provided in different languages, which is useful for our international students and visitors. Currently, an RFID-installation is evaluated which is planned to be used to add location based services to the guide.

Besides other applications, using *iCampus Wildau* as a multimedia guide for the university library has been especially successful. The library of University of Applied Sciences in Wildau is a central and, for many students and university employees, the favorite place on campus. Located in a former factory hall and now a listed building, it has a very interesting architecture and, most important, it is a modern and convenient place to work and study.



Figure 2: Indoor photo of the library before

The library is outfitted with different features like an RFID-based self-booking system which can be used by any library user, there are book shelves holding reserved book collections recommended by different lectures for their courses, there are many desks for self-study as well as special rooms bookable for group work or carrels (see Figure 3):

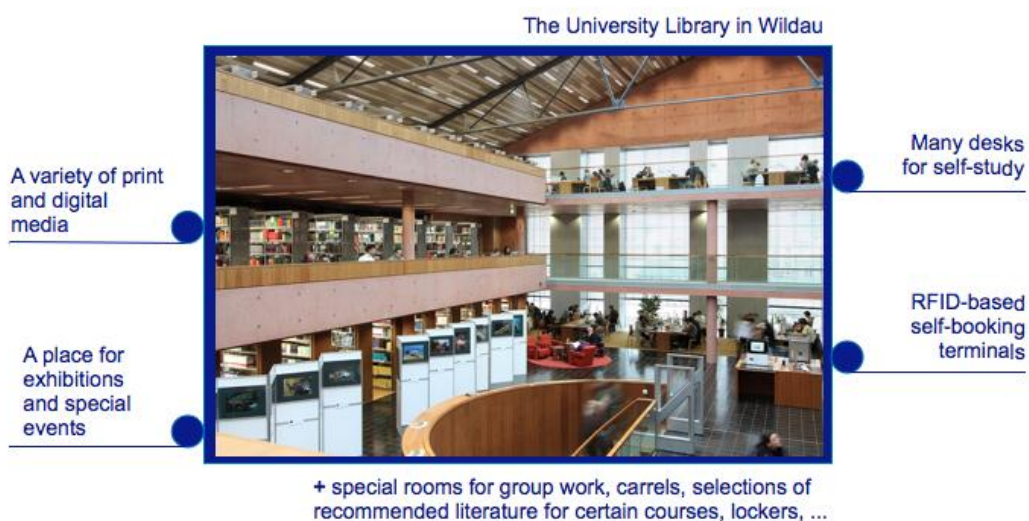


Figure 3: ... and after restoration by the architects Chestnutt_Nies [4]

Moreover, the library has been a place for interesting exhibitions and cultural events, e.g. concerts.

Each September, at the beginning of a new academic year, the library staff is faced with a special challenge: About 1000 freshmen need to be introduced in using all services and facilities of the library. In practice, this means that there are many group introductory courses to give – not only in German, but in other languages like English, Russian, or Spanish, as well.

The *iCampus Wildau* multimedia guide for the library helps to reduce this workload, since all important information has been provided by the guide as well. Let's see how it works. In Figure 4, you can see an example running on a mobile device: When you start the guide (Step1), then all available up-to-date information is loaded via wireless LAN (WLAN, wi-fi). Next, a user can make several decisions, e.g., what language he (or she) wants to use and what information he wants to listen to (Step 2). All content is location based, i.e., the information is provided where it belongs to. So, the user can now (virtually on a map and in real life) walk through the library and choose a point of interest (Step 3). Done so, a 360°- picture opens up showing the chosen point. In an augmented reality based way, the information which belongs to this place is placed on the picture (Step 4). By tapping it a user can listen to it (Step 5).



Figure 4: iCampus Wildau - How to use the system

In this way, the *iCampus Wildau* application acts like a virtual guide for its users, and although it won't and does not want to replace the personal contact to the library staff, it is able to add more convenience to both sides --- to the staff and to the new library users.

iCampus Wildau – system architecture

The iCampus system has been very flexible when it comes to adding new applications. How this works, will be explained in the following. In order to be open to many different application scenarios as well as to new ideas, the system is designed as an open client-server-architecture which is illustrated in Figure 5.

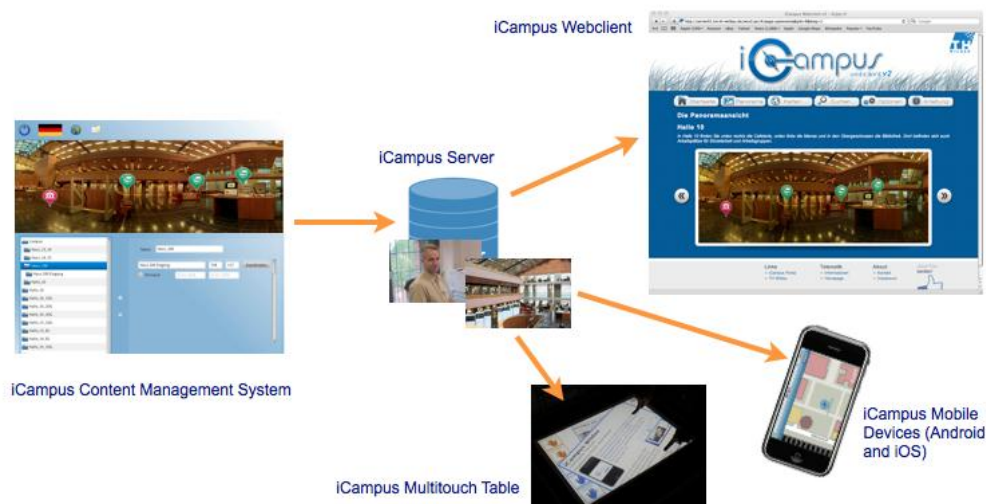


Figure 5: iCampus Wildau - general system architecture

The central part of the system is a server which stores all content information and media (audio, video, pictures, text information). New applications and their content can be added to the system and administrated easily by using the *iCampus* CMS (Content Management System). Several different clients are conceivable since the content is provided as a unified XML-based interface by the server. So far, clients for Apple's iPhone/iPod Touch, for Android based smartphones, for all common web-browsers, as well as for a multitouch table have been available.

When adding a new content to the system, it has to be tagged with an application category. The system uses these categories to allow any user to filter any application out or in as wanted.

Because not only the application content has been administrated by using the *iCampus* CMS but the maps and 360°-pictures as well, it is possible to map the *iCampus* system to other locations like other libraries.

First experiences

Most parts of the *iCampus Wildau* library application have been available in four languages so far: German, English, Russian, and Spanish. Besides the successful guided introduction to services and options of the library, the guide has been used for cultural occasions, too. For instance, there is a very popular tour explaining the architecture of the building and its history. This has been fascinating not only for visitors but also for university members (students and staff), who can see their library as more as a place to work or borrowing books now.

Another interesting experiment was using *iCampus Wildau* as a multimedia guide for one of the exhibitions placed in Wildau. The content for it was provided by the creators of the exhibition. The *iCampus Wildau* team organized adding the content to the system. This worked very well and without any complications. During the time of the exhibition, users could borrow an iPod Touch and use it to get additional information (see Figure 6).



Figure 6: iPod Touch with multimedia guide for a special exhibition

To keep this exhibition alive, any interested user can still get the content via the *iCampus* webclient [3].

A short summary

In this paper, we introduced *iCampus Wildau*, a mobile and multilingual on-campus-information system and one of its successful applications, a multimedia guide for a university library. We explained, that it is easy to add new content and demonstrated some interesting use cases. *iCampus Wildau* is a living project, where new ideas and approaches are investigated and tried out. Currently, an installation for indoor localization using active RFID devices has been implemented, evaluated, and tuned. First results are very promising, so that we plan to add location based services to the *iCampus Wildau* shortly.

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Furthermore, even when, as in the case of *iCampus Wildau*, the information system works fine and has been approved by many different users and on many different occasions, there is still a main part of work to be done using it and this is creating and administrating good content. So, many thanks to all the enthusiastic content providers at our university!

We also would like to thank Katharina Halibrand, who has been our “iCampus voice”, for her very cooperative and uncomplicated kind to handle any problem. It has been a pleasure to work with you!

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