Project "Go Building" - xplore 2008

School: BBS 1 Mainz - Technical School for Automation Engineering
Team: Marcus Astheimer, Hans-Jürgen Reck, Oliver Schneider, Robert Schönfelder
Tutors: Thomas Löser, Markus Musielack, Uta Führich-Albert

Initial Situation
The Technical School for Automation Engineering is placed in the building of the school providing vocational education. About 180 teachers are supporting the 5000 students in the BBS1 Mainz. According to the size of the school one big problem often occurs, how to find the correct classroom. As students of the Automation Engineering School we have to attend the classes after 5:30pm. At this time the offices of the secretary remain closed. Furthermore the caretaker and the school management are in the evening hours out of business. If lessons were cancelled in the evening we often had problems to get the information about it. Visitors, parents and sales representatives, who visit the huge building only from time to time, are confronted with the same problems. They wander around to find the correct room or teacher.

The Resolution
With our project "Go Building" we want to create a very simple and user-friendly system which is able to guide our visitors.
The "Go Building System" is aimed to help, visitors, students and teachers to find their way easily. A lot of valuable time can be saved and spend for education instead. "Go Building" should be a powerful tool for facility management and visitor guiding placed in the entrance hall of the school building.
"Go Building" will be specialized for the requirements of the vocational school in Mainz. The system will be totally integrated in the available infrastructure of the building.
We want to build a modular system for universal use. So it is also possible to change the system very easily according to the requirements of other customers.
The system can be used on hotels, exhibitions, airports or companies and for all customers with frequent visitors. The visualization is also cascadable and that is the reason why it is very easy to change the front end according to the customer's requirements. So the customer is able to decide which functions should be enabled or disabled.

Description of the system in reference to the school installation

The main component is a big reception column in the foyer of the school building.
This column is the visitor guide, electronic doorman and the central operator's control. All the functions of our "Go Building System" are integrated in this column.

To minimize the installing complexity the system should meet the following requirements

A conventional power cord with 230V operating voltage provides the power supply. Ethernet connection should be used for the integration of the system in the network. An optional wireless network connection is also supported. The advantage of this feature is the need of only one hard-wired connection namely the power supply.

States of the Main System

Go Visitor
In this state the system will be operated as an electronic doorman with all the features and information the visitors need for their visit at BBS1 in Mainz.
An optional proximity sensor supports the system. The column will be woken up automatically and at the same time the touch screen systems will be powered up. The visitor is welcomed by the system. Also an optional sound module is possible with the preset sound for welcoming the visitor. After welcoming the visitor will be able to select the required function.
The visitor mode has several features. One of the features is called navigation mode. With the help of this mode the visitor is able to find the correct classroom at an event. Additionally he can get information about the event or the school in general.

E-mail, ip-phone, web browser to get in contact with tutors or the school management are other features the visitor mode offers.

On top of this important information like

- where do I find...?
- frequently asked questions
- phone book
- news
- evacuation route
- ...

is provided.

The collected information like a route map to the workshop or classroom can be printed directly with the integrated printer in the column.

One important requirement is the user-friendly design of the "Go Building System".

All information must be accessible easily and quickly.

Another optional feature should be the possibility to connect the video projector in the school foyer. This should be used for optional information about an event.

Further input devices are a vandalism secure keyboard and a scroll wheel to expand the user features at the column.

Another component of our system is a large LED panel. This large panel is also used for guiding the visitor in the building in combination with the main system. On this board the visitor is able to see where to go. The panel is operated with different colures for the floor plan, so every floor has its own colors. Also the route information is shown on this LED panel. For example the colors of the panel switched into the colors of the floor. Then the floor plan is lighted in this colors and the route is shown by LEDs.

Go Student

Another task of the info column should be an information server for the students which handles all important information, up to date timetables and other events. There will also be a Class-Room-Finder to inform about postponed lessons or even transferred lessons form one room to another. All functions of the Go Visitor mode will be available for the students, too.

Go Education

There should be an integrated conception about the complex training system of the BBS 1 Mainz for the students. Preconditions and graduations should be demonstrated in a compendium from the beginning of the apprenticeship to the university entrance qualification.

Basic information about the system

Information column in the entrance hall

- big eye-catching column which is directly noticed by the visitors
- integrated printer for directly print outs like directions
- big integrated display
- robust quality because of imminent vandalism

LED information wall

- fast and simple building overview
- simple to understand
- room and route indication with LEDs in different colures
- optional integrated display for more information

Ethernet/WLan WWW-Interface

- possibly show more information about current arrangements on a display or a video projector in the rooms
- requirement for the creation of a consistent information system from the entrance to every single room

Optional integration into the available school website

- integration into the available school website
- timetables informing about short-term replacements of teachers

Advantage of this system should be the modular construction system that enables according to the arrangement and adaptation to integrate the needed features.

The column should also reflect a uniform appearance of the school and fulfill the following requirements:

- compatible to web applications

- extendable

- simple to handle

- simple to configure

- consistent concept

- not only for schools, but also for any application

Outlook to future functions

The connection of the "Go Building System" to the building control offers many possibilities. The caretaker can get easily information about heating installation or the interior and exterior lighting of the building to name only some advantages.

In cases of emergency it will be possible to get information for the fire brigade or the emergency doctor.

Another option is the visualization of the energy statistics of the solar plant on the roof of the BBS1 building.

LCD modules can be used for a direction sign on certain floors. They should show the visitors more information on their way to their destination address. The main module in the foyer will operate these modules.

The parking garage guide system could help to find your car, the cash box or also the escape routes.