

1 Introduction

- It is often difficult for KIT visitors and new ~~students~~ students to find the buildings, rooms or ways between them on the campus. Our product will simplify this task, leading to better time efficiency and less stress for everyone.

The general goal of this project is the design and implementation of a routing system for the KIT campus. The system will be able to compute and to display the shortest path between a starting point and a destination. It will be possible to route from and to buildings and to rooms inside buildings. For the latter, the system will display a floor plan of the building. It will also be possible to search just for the destination, without computing a route from some other point.

- On the administration side, the system will provide a graphical user interface (GUI) to modify the underlying map data if needed (e.g. because of construction works or more details are needed) or create it from scratch. It will be possible to easily add/delete buildings with or without routing information of the interior. Moreover, it will be possible to add vertices and edges with information that are necessary to do the routing.

The project will be shipped with the map data of at least two buildings of "KIT Campus Süd" and a map of the outside campus.

- Both routing and administration will share a component for map visualization.

Is this necessary in the intro?

2 Objectives

In this section, we describe in detail the functionality of the routing tool and the admin tool. This includes the functionality and the different ways for the user to input data into the tools, as well as how the tools format that information and show it to the user.

2.1 Mandatory Criteria – Map Component

2.1.1 Criteria used in Routing and Administration Tool

Displaying *the map*

- Display a position on the map
- Display a path between two places on the map
- Display ways passing under/through buildings differently
- Display a map of the campus without the underlying graph

It is also possible to just look at the map of the campus, without searching for any points or routes. *Possibility to enable/disable the view of the graph on top of the map. (Probably only for the administration tool).*

This probably means that by default you will show to the user the vertices and edges?

- Display a floor plan of a building

Like the campus map, the floor plan of a building can also be viewed without specifically searching for a point within that building.

User Interaction *with the map / Navigation on the map*

- Provide a zooming and panning function for the map

The user can change his view-point by zooming in/out and panning

It is vital for any application dealing with maps to provide those basic navigation features.

- Switch between floors of a building