

## Bachelor's/Semester's/Master's Thesis

# Medical Evacuation at Munich Arena next to Munich Airport



### **Description:**

With regard to the increasing amount of disasters and attacks on critical infrastructures, it is necessary to plan and practise properly for being prepared to those possibly future incidents. Currently, the Munich Arena for 20,000 visitors is in the making between the Northern and Southern runway of Munich Airport (MUC). As there are strict constraints where to evacuate to, including conceivable casualties, an optimised mass evacuation flow on ground shall be simulated towards a virtual field hospital away from the airport area, where a statistical triage is executed. In addition, the respective field hospital with two helipads is set up as building information model (BIM) in ARC CAST TERMINAL, which is used by Munich Airport.

### **Work Packages:**

- WP1: Reading up on the cartography of Munich Airport and future location of Munich Arena
- WP2: Developing of an optimised mass evacuation flow on ground for 20,000 visitors in MATLAB
- WP3: Setting up a building information model (BIM) in ARC CAST TERMINAL
- WP4: Testing, evaluation and documentation of results.

### **Prerequisites:**

- Proficient with MATLAB OPTIMISATION
- Proficient in operations science and statistical methods
- Learning ARC CAST TERMINAL as BIM-software and using it
- Speaking German and English language fluently

### **Desirable:**

- Experience with optimisation and interest in medical evacuation (MedEvac) and/or airports

### **Contact:**

**Martin Azzouni**

MW3607 (Secretary desk)

**+49 152 583 025 08**

[martin.azzouni@tum.de](mailto:martin.azzouni@tum.de)