

Smart EXPO

Group 3-9

Given real life experience and tons of reports about the overcrowding queuing problem in Shanghai EXPO 2010, our group aimed to work out a smart solution for crowd control and efficient queue management with the Built-in Smart Environment inside a pavilion. Besides, we built the Dynamic Information Updating System, which provides information such as weather, temperature and any other information that operators of a pavilion want to show the visitors.

Smart Queue System:

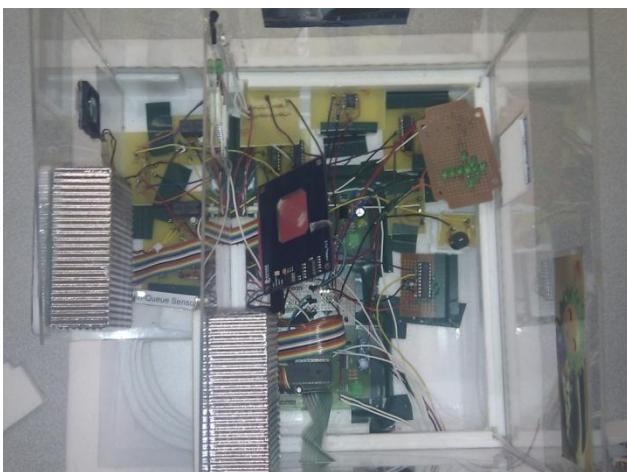
In this system, we designed a completely new queuing scheme to do manage crowd effectively. The scheme mainly divides the queue into two 2 categories: normal queue and “smart” queue. “Smart” queue is a “virtual” queue. Normal queue starts to line up when the pavilion is full and smart queue can only be triggered when both the pavilion and normal queue are full. Visitors queuing in smart queue are able to hang around and visit other pavilions during his waiting for turn in smart queue. As soon as he comes back after his assigned queue number, he would be able to enter the pavilion from smart queue. By doing so, we controlled the normal queue length and at the same time, we give visitors much more freedom and flexibility than conventional queuing systems.

Built-in Smart Environment:

In this system, the pavilion is equipped with timely responsive system to deal with different scenarios. The ceiling of our pavilion is transparent; our smart lighting can adjust the illuminating intensity according to the intensity of the sunlight. Fire response system can provide immediate exit directory and fire alarms when fire is detected. Smart fans in queuing place can adjust the number of operating fans according to the queue length and operating speed of fan(s) according to the temperature.

Dynamic Information updating system:

This system enables timely update of information such as weather, temperature by the operator of the pavilion on an LCD. The additional information update also provides a channel for cases such as search notice and announcement. We also show the estimated waiting times of other pavilions on the same LCD.



<http://www.youtube.com/watch?v=pW8VSlMlN5Q>