

## Scenario



Nowadays, riding bicycle has been a popular recreational sport in Taiwan. Students on campus rely on bicycles especially. In order to promote riding safety and seize road condition for students, Taipei Chengshih University of Science & Technology (TPCU) integrates visualized map website and App on smart phones to show position and condition of bicycle riders (students) instantly.

## Goals

In order to know riders' instant riding condition, TPCU developed an App applied on smart phone to record and send back riders' current point. That is to say that every rider has to carry a smart phone while riding for recording and transmitting the moving trace to the server.

In order to react to contingency that might happen while people are riding bicycles, The Cycling Team Management System should not only have front-end website to display the map and back-end platform to manage and enter rider's personal information such as name, telephone number and emergency contact person, etc.

## Solutions

The development of The Cycling Team Management System consists of website platform for displaying information of cycling team and the cycling team APP. Adopting SuperGIS Server 3 as map server, the website platform allows users to publish and manage the existing map information. Meanwhile, the cycling team APP, designed for sending current position of riders back to the server, allows riders to install in Android system on smart phone and transmit the related information during riding bicycles.

SuperGIS Server 3 is designed for enabling the organizations to create, manage, integrate and publish various types of GIS services. Through it, the spatial data and spatial image in all types as well as GIS functions can be utilized as GIS services in desktop, mobile and web applications over the internet. In The Cycling Team Management System, SuperGIS Server 3 is important in managing geographic data.

## Goals

- To comprehend riding condition of each rider, TPCU developed The Cycling Team Management System. In the system, routes that each rider adopts will be instantly recorded and displayed.

## Results

Main features of The Cycling Team Management System include an App on mobile device, map website and data management on back-end platform.



Picture one: start page of the system

### 1. App on mobile device

To transmit rider's current position and display it on the website platform, every rider needs to carry smart phones during riding. Riders can start the APP and log in to send information of their current position back to the server. Therefore, information of rider's present positions shown on the website platform can help administrators recognize riders' condition.

### 2. Map website

The map website of The Cycling Team Management System can instantly display not only maps but also information of rider's present position. The left of the website displays the names of the riders who logged in the system. And the map displayed on the right of the website allows administrators to manipulate basic map viewing functions such as Zoom in, Zoom out, Pan, Query and so forth to recognize riding information of each rider.



### 3. Back-end platform for data maintenance

The back-end platform of The Cycling Team Management System supports administrators to build, delete and edit member list. In addition to riders' basic information, the platform also lists emergency contact person of each rider for administrators to contact while emergency.

### Benefit:

The system integrates riders' current positions with map website so that cycling team administrators can seize each rider's condition through dynamic information on the map in case of any accident or abnormality occurring to any rider. Furthermore, administrators are able to notify rescuing teams to help the riders. Thus, while an accident happens, the administrators can response instantly to help the riders. And the safety assurance for riders in cycling team is also provided.

## Results

- The system will start to record and transmit rider's current position after riders log in.
- Map website displays map information and provides various GIS tools for users to view and query information and position of riders efficiently.
- In the case of back-end platform, administrators are able to manage member information via the webpage.

## Software Used

- SuperGIS Server