

MMS (Mobile Measurement System) Using Omni-directional Camera and GPS on Bicycle



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Sightseeing travel using bicycle is rapidly increasing in Japan recently.

It is getting popular in sightseeing areas where many shared bicycles are used as an easy and flexible means to visit many tourist attraction spots.



1. Abstract

However, the provision of bicycle road environment does not keep up with the increasing cyclists, and cyclists often face dangerous situations without pertinent information about potential risk along their cycle routes or they may be lost while running in the unfamiliar area.



It is important to provide them with the appropriate information while on their cycling tours.

**Dangerous
area**

Destination

**Tourist
spot**

**Easy to run
road**



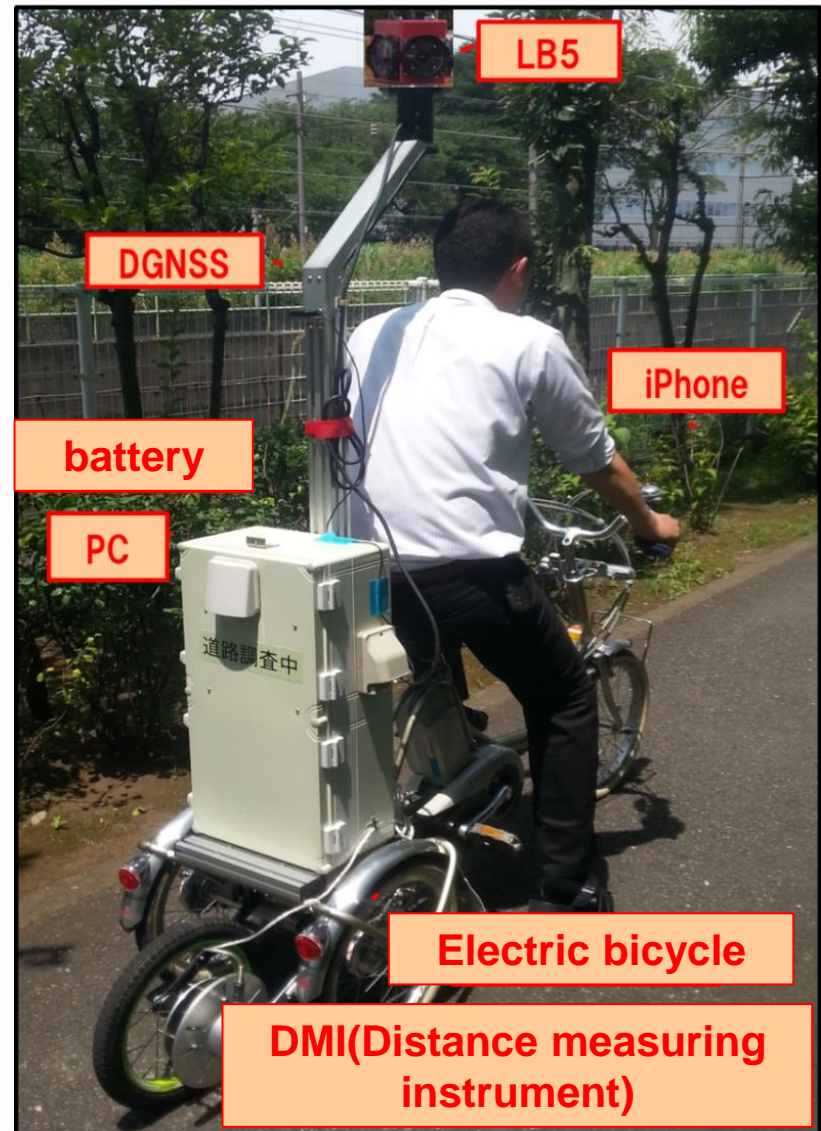
#2. Measurement

We developed a data acquisition system called MMS (Mobile Measurement System) using an Omni-directional camera mounted on a bicycle. Omni-directional camera can take pictures of all directions while running along the road.

POINT GREY
Imaging



▲ Omni-directional camera (LB5)





#2. Measurement



medialooks



#2. Measurement



▲ Omni-directional camera (Right front)



#2. Measurement



▲ Omni-directional camera (Left front)



#2. Measurement

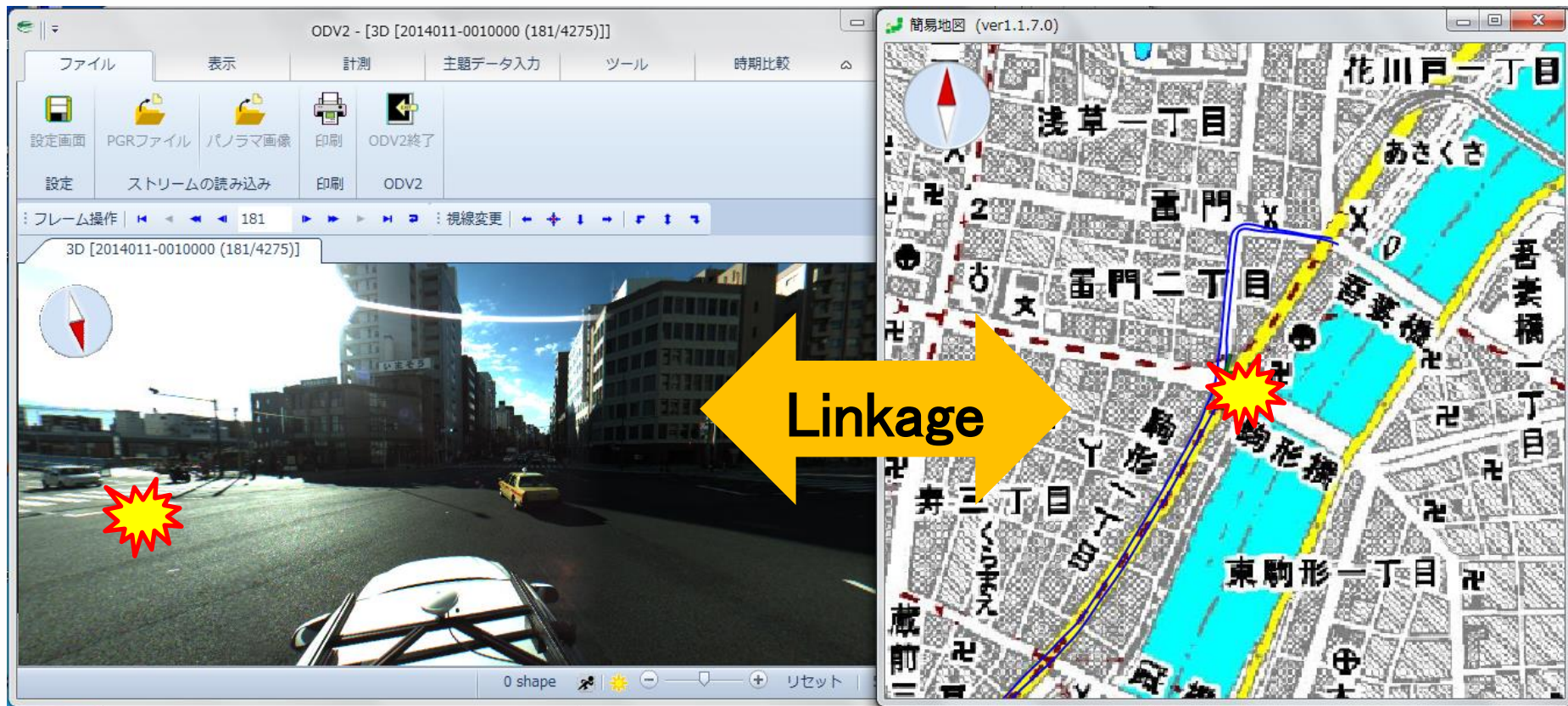


▲ Omni-directional camera (Back direction)



#2. Measurement

It can acquire positional information using a GPS recorder, too. Any hazard or danger on the road can be recorded and later analyzed from image and location data using GIS.





#2. Measurement

The operating cyclist can record the description of hazard or whatever attracted his attention while running, and his comments are also added to the database.



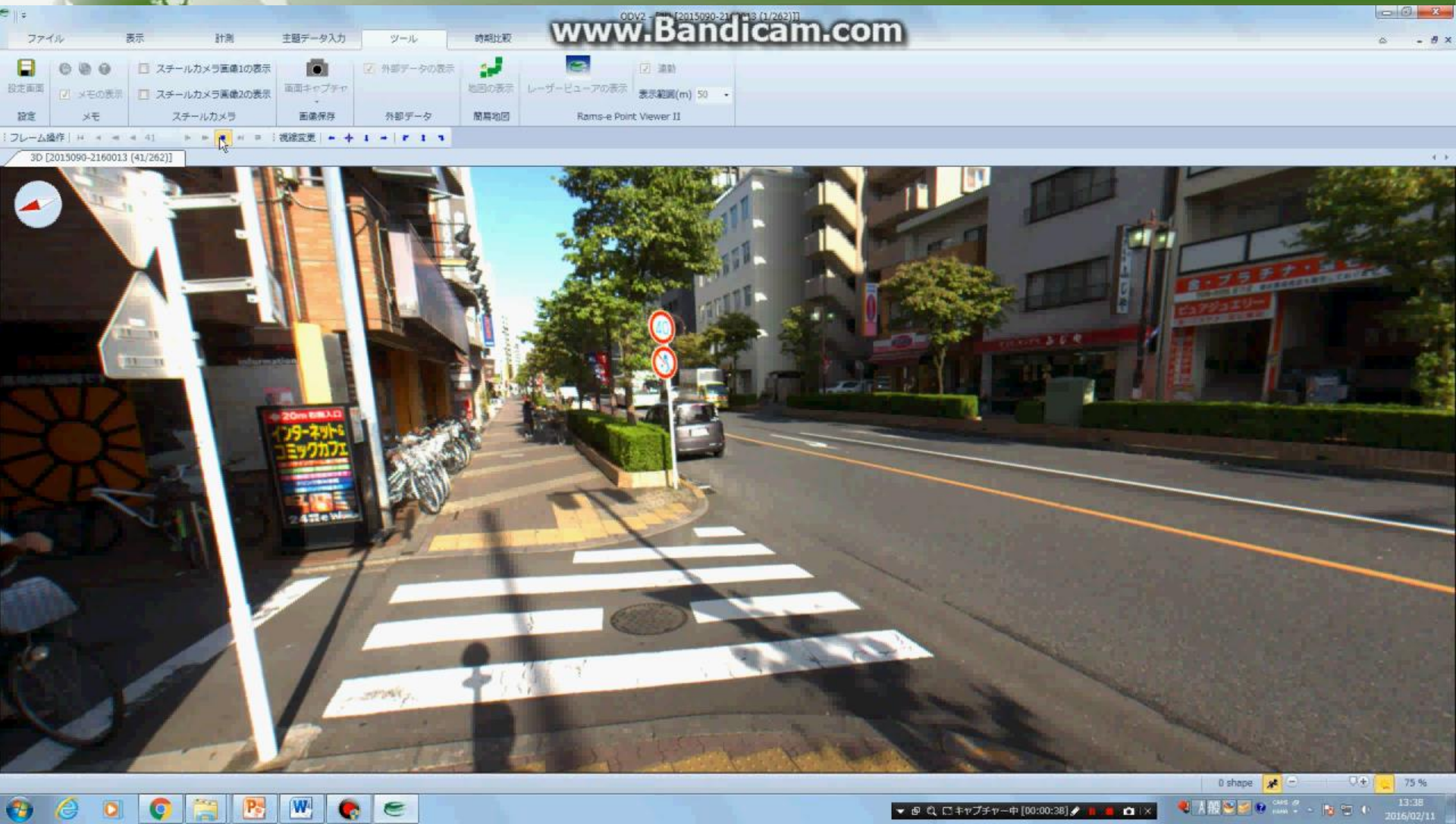


#2. Measurement

er with text
product name ODV2)



#2. Measurement



#2. Measurement

Sightseeing cyclists who have the access to the database via PC or mobile devices can share information about hazardous location with comments by other cyclists.

They can also share the knowledge about the location of sightseeing spots and their descriptions pooled by other peer cyclists.



From the safety viewpoint, the road width, size of hazard and location can be measured from image analysis and to be reported to the maintenance crews to rectify the problems.

There is a bus stop and no space for bicycle runs

項目	値
X座標	0.00000
Y座標	0.00000
H座標	0.00000
距離	5.38662

Width



Thus the bicycle road environment will be improved and cyclists can enjoy their trip while running safely.





Thank you

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