

Traffic Safety Systems Development Project Using RADAR

<MEMBER> Final Design Review: 2017/07/28
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Background

- Safe driving systems using RADAR are widely used.
- Most safety systems are wearing radar on **cars**.
- Few traffic safety systems using RADAR on **infrastructure**.

Regional features

< Omiya as Residential area model >

- Complicated roads
- Bad visibility
- Accidents don't occur in certain place.
- The cause of the accidents is most often due to **carelessness**.

< Toyosu as City model >

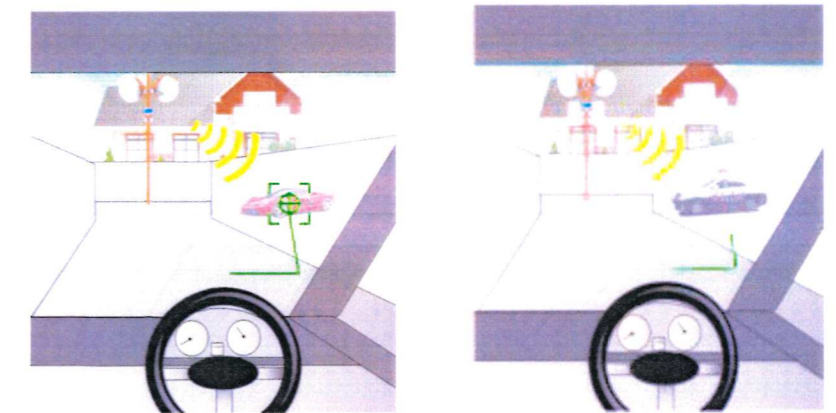
- Wide and open roads
- Many companies
- The highest population density
- Taxis and bicycle accidents are relatively common.

Proposed Method ① for Omiya

1. Detect **Position, posture, size** of car by using RADAR installed in infrastructure
2. Select CAD data of the same size car
3. Display detected car on windshield

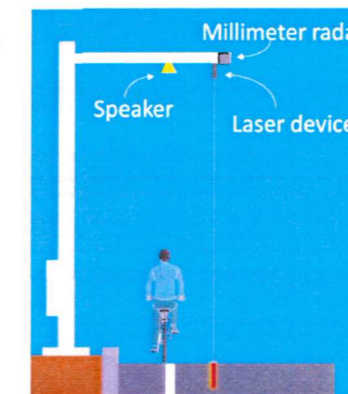
Display **police car** with constant probability

Promotes **safety driving**



Proposed Method ② for Toyosu

1. Detects vehicles (cars and bicycles) by using RADAR
2. **Draws a line** of light on the road from upper device
3. Improvement of bicycle recognition
4. This can alert in emergency



Millimeter RADAR
Obtains environment information

Processing device
Vehicle recognition

Predicts the paths
of vehicle

Outputs laser
Laser device

Alerts
Speaker

Purpose

<Propose new traffic safety systems>

- The systems that we will propose should be suitable for Toyosu and Omiya.
- We will use RADAR on infrastructure

Promote bicycle safety

Conclusion

- Proposed traffic safety systems at Omiya and Toyosu
- Implemented experiment on the road