

# **R&D Project for Huge Number of Autonomous Mobility Units**

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# - What is an Autonomous Mobility Unit ? -



Robot



Car



Drone



Wheelchair



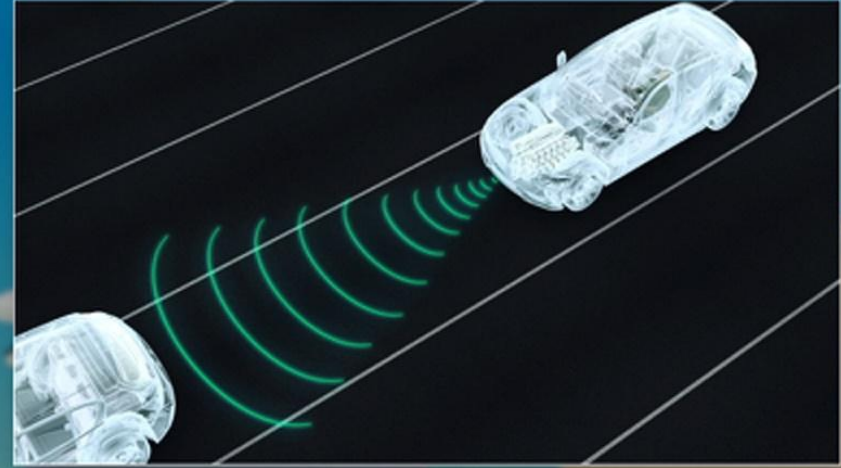
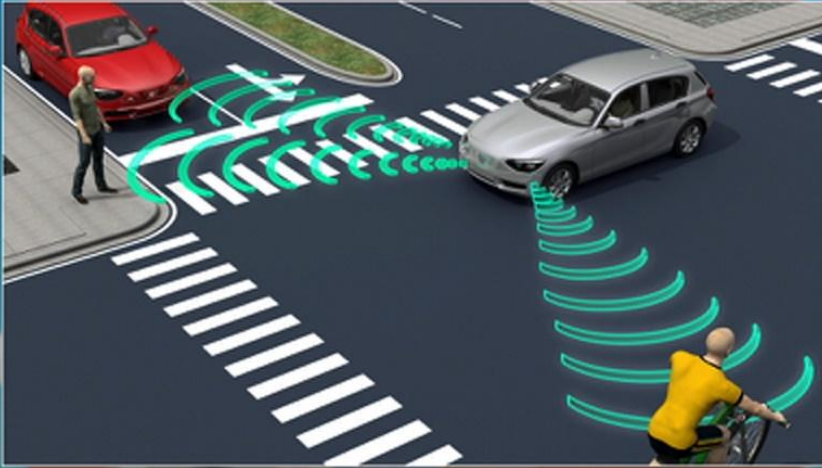
Transport robot



Farming vehicle

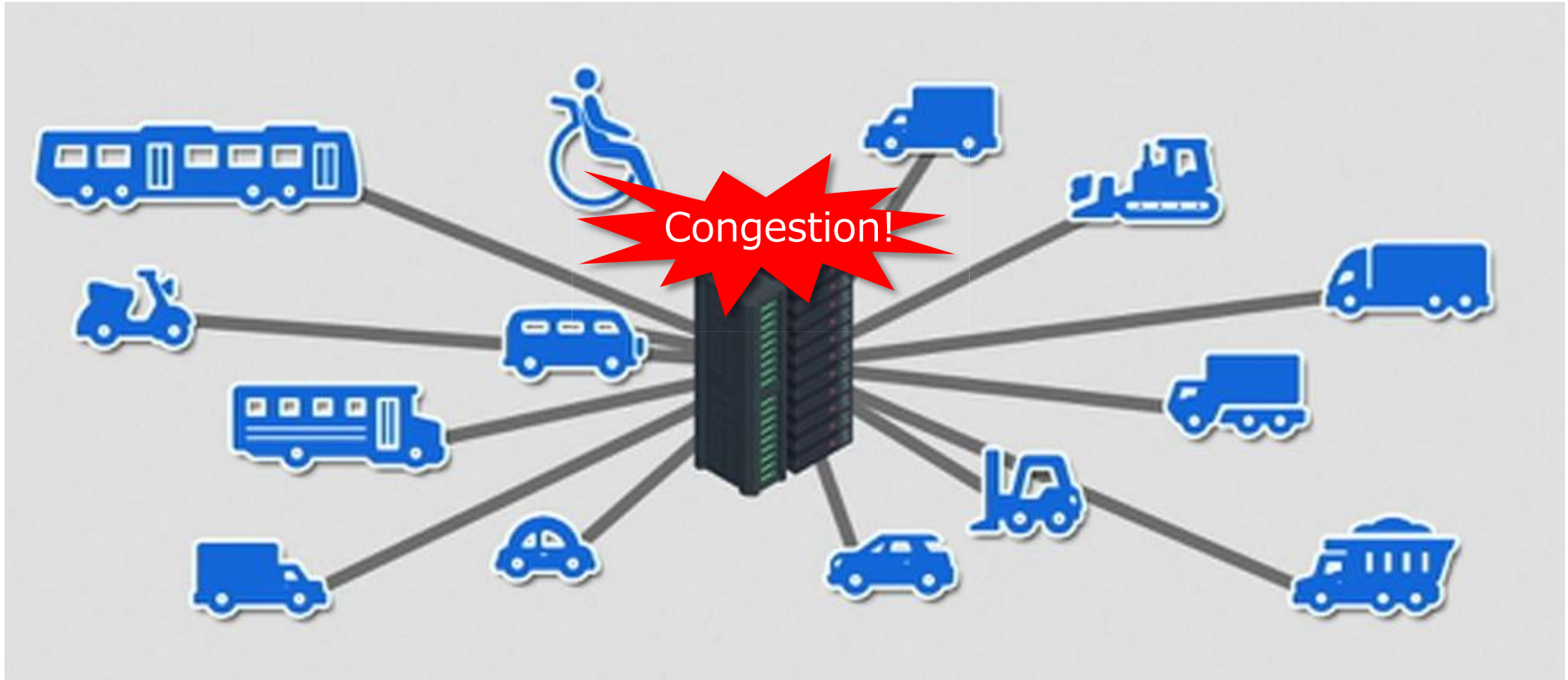
# – To build an Autonomous Mobility System –

Mobility units keep track of the latest and accurate surroundings using sensors and telecommunication.



## – Challenges –

How to operate the requests from a huge number of mobility units ?



## – Research Scopes –

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1. Platform for stable communication

Autonomous mobility system platform

2. Mechanism for the efficient delivery of the information

Delivery of a dynamic map

3. Mechanism for accurate and appropriate information delivery

Abnormality detection and response system

# **1. Autonomous mobility system platform**

# - Autonomous mobility system platform -

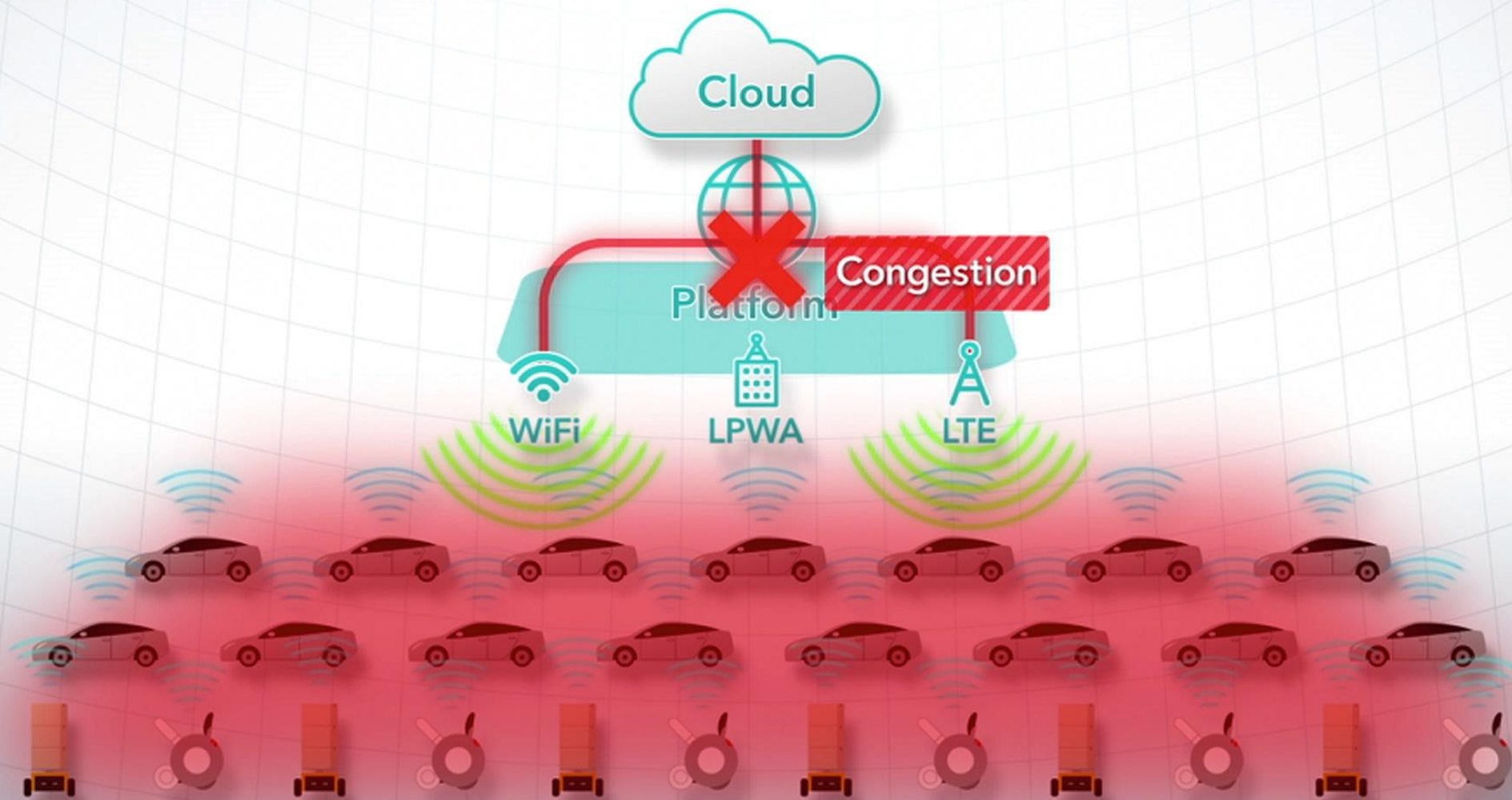


# - Autonomous mobility system platform -

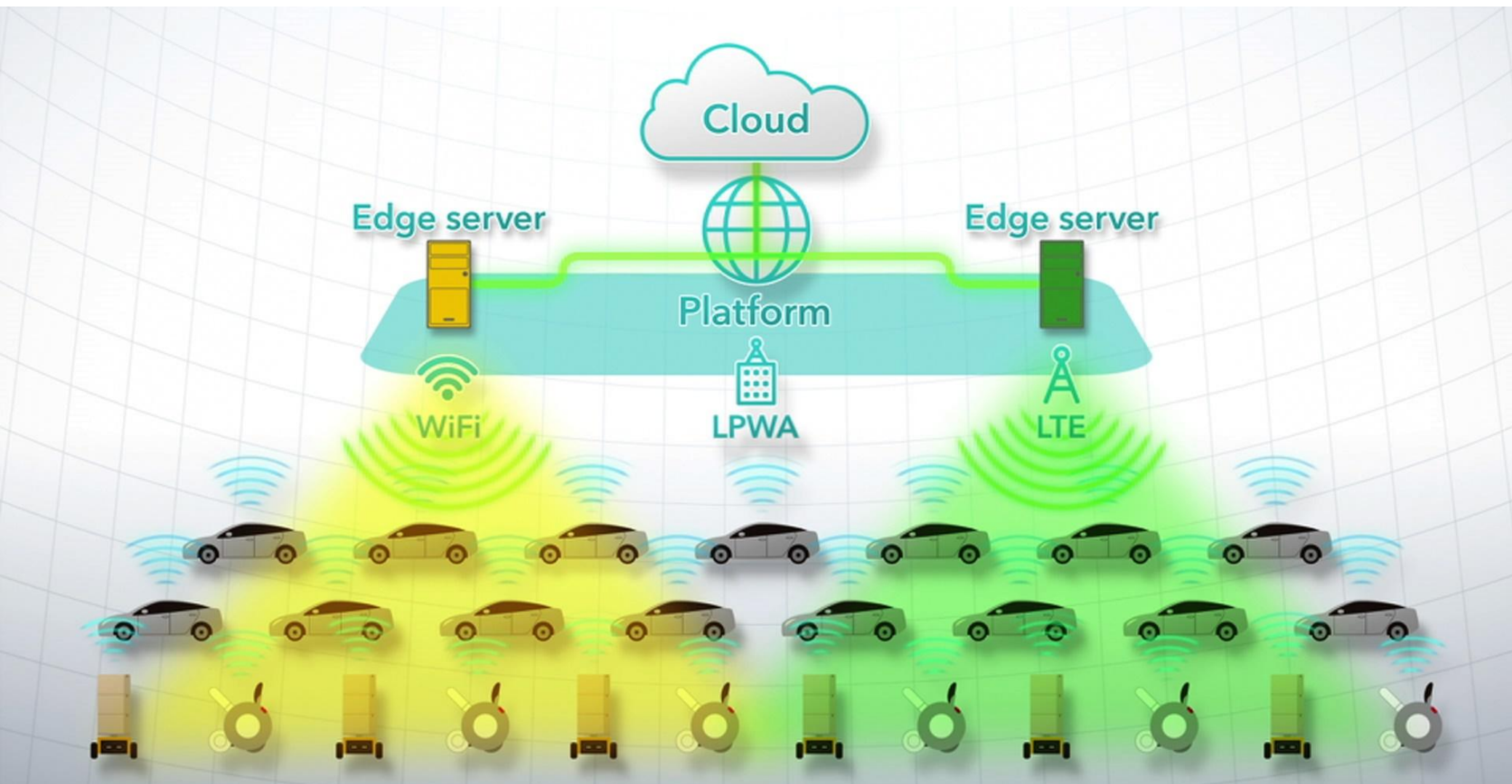




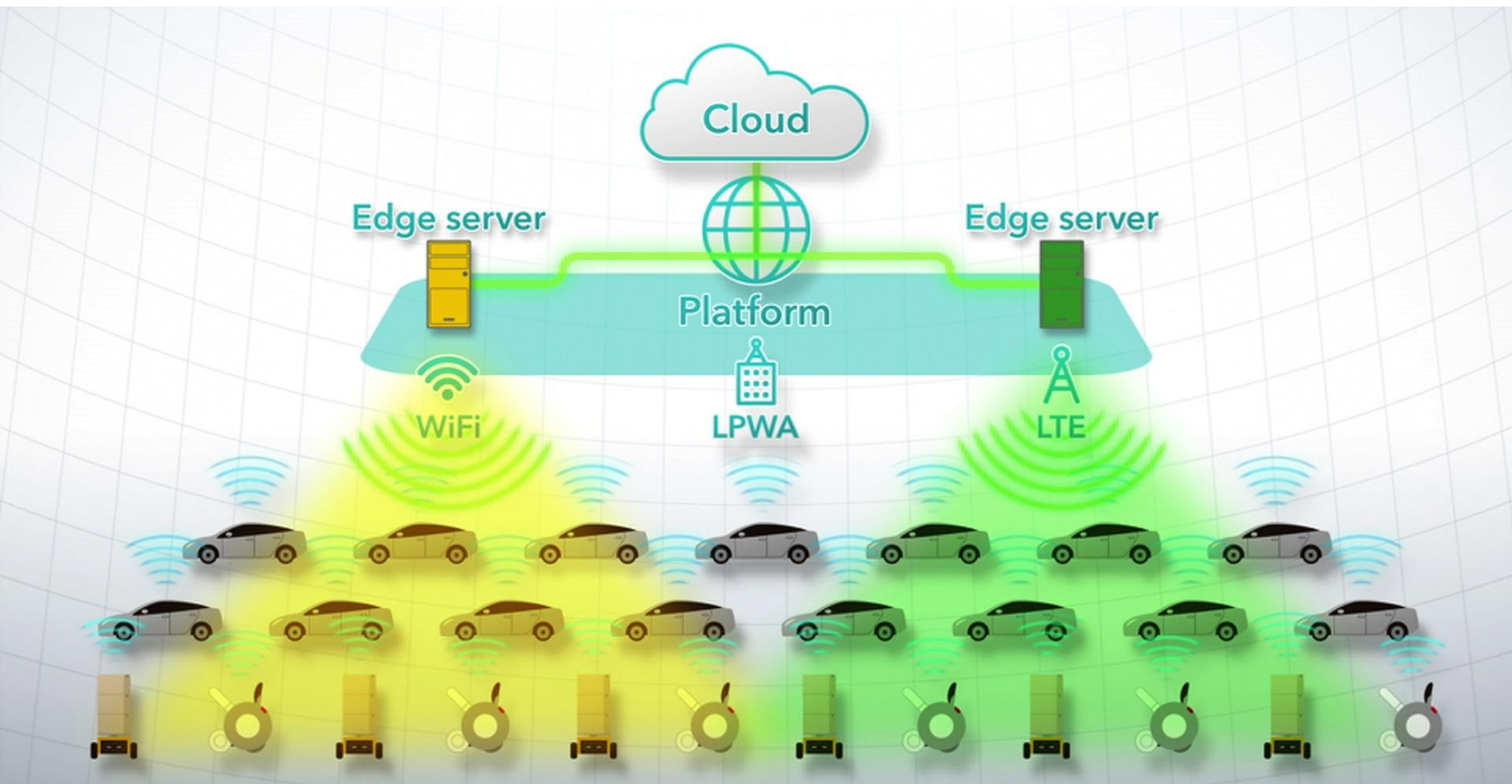
# – Autonomous mobility system platform –



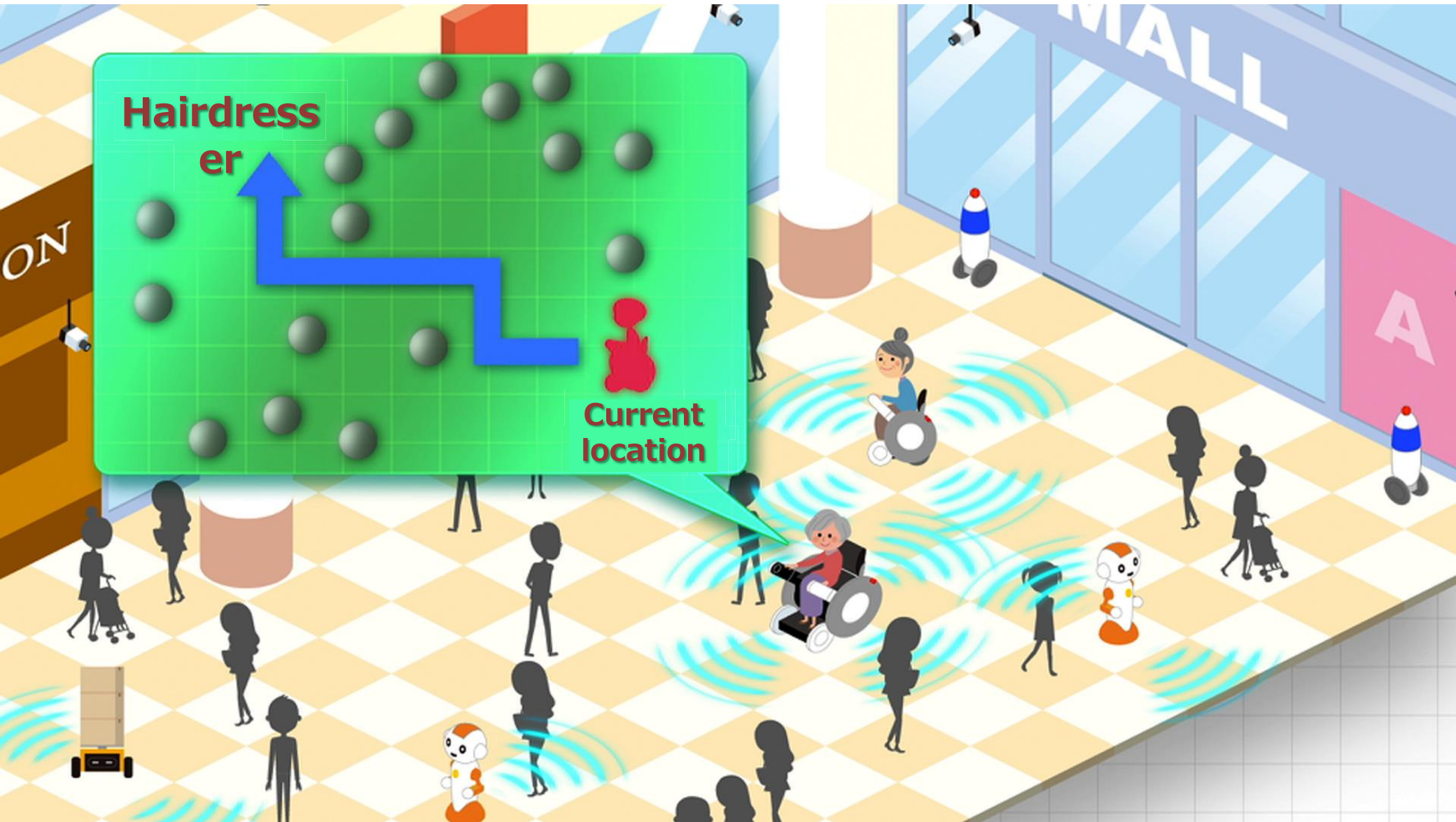
# - Autonomous mobility system platform -



# – Autonomous mobility system platform –



# - Autonomous mobility system platform -



## **2. Delivery of a dynamic map**

# – Delivery of a dynamic map –



# – Delivery of a dynamic map –

Dynamic map

4. Dynamic information

3. Quasi-dynamic information

2. Quasi-static information

1. Static information

3D structure

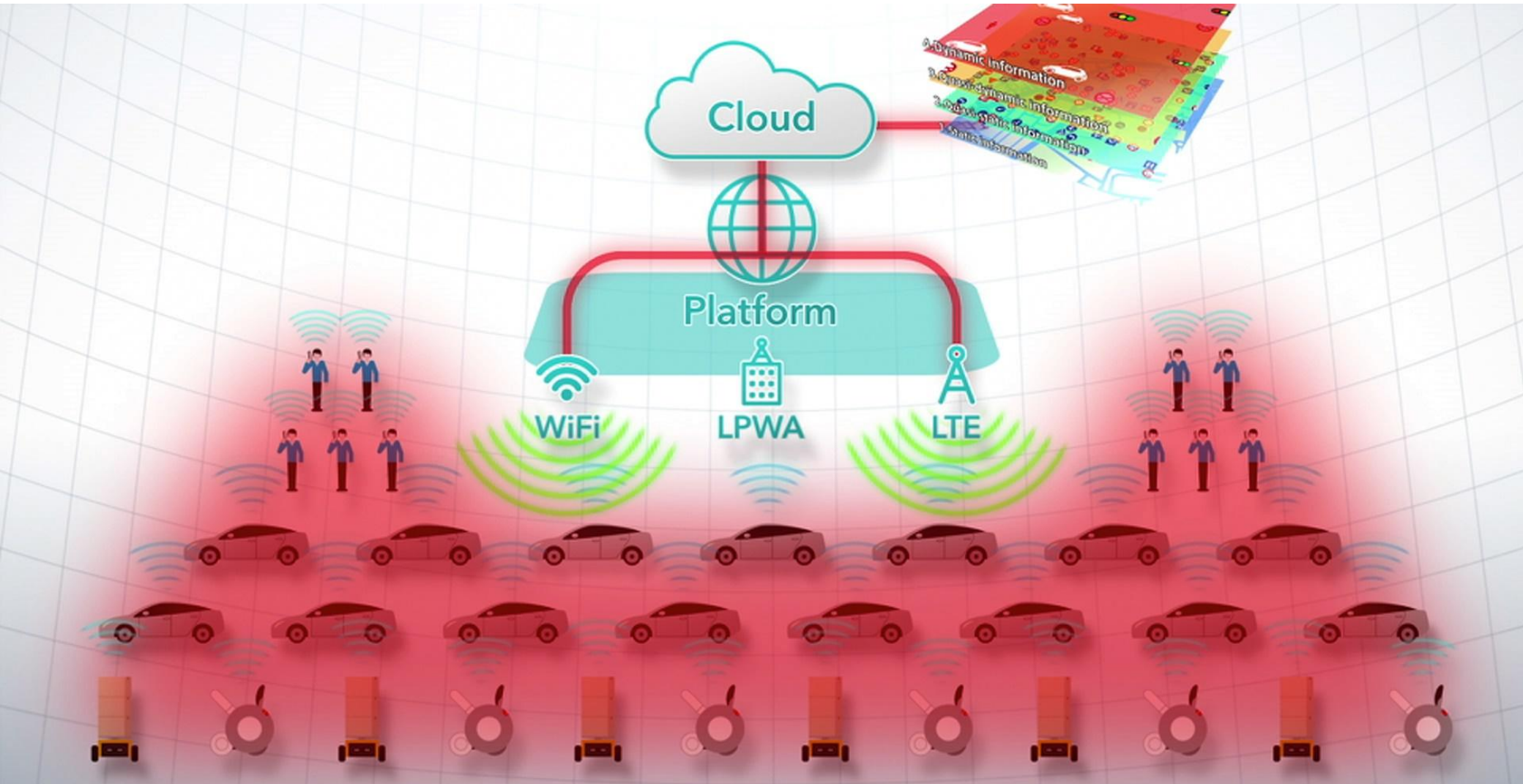
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# - Delivery of a dynamic map -

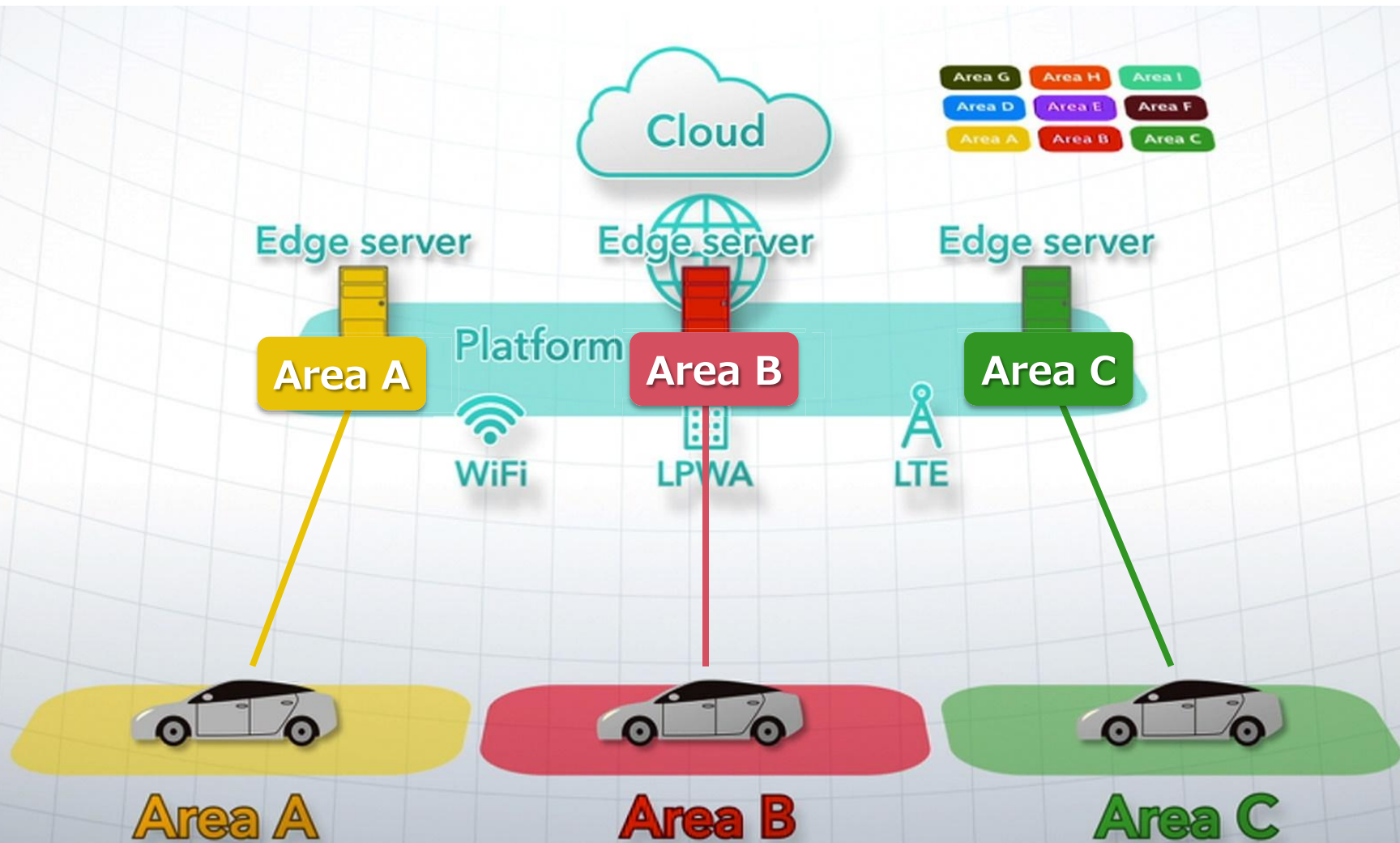




# - Delivery of a dynamic map -

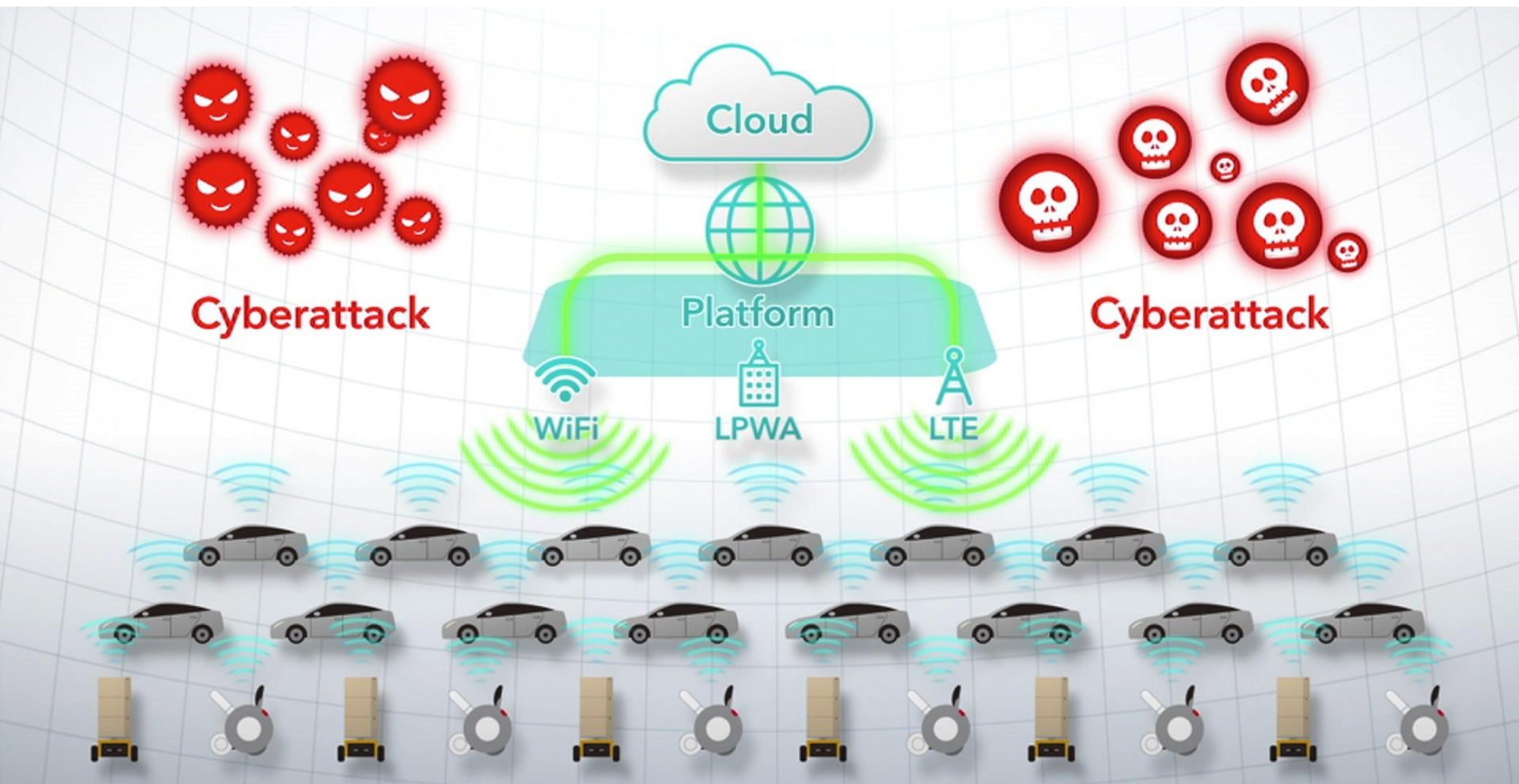


# - Delivery of a dynamic map -

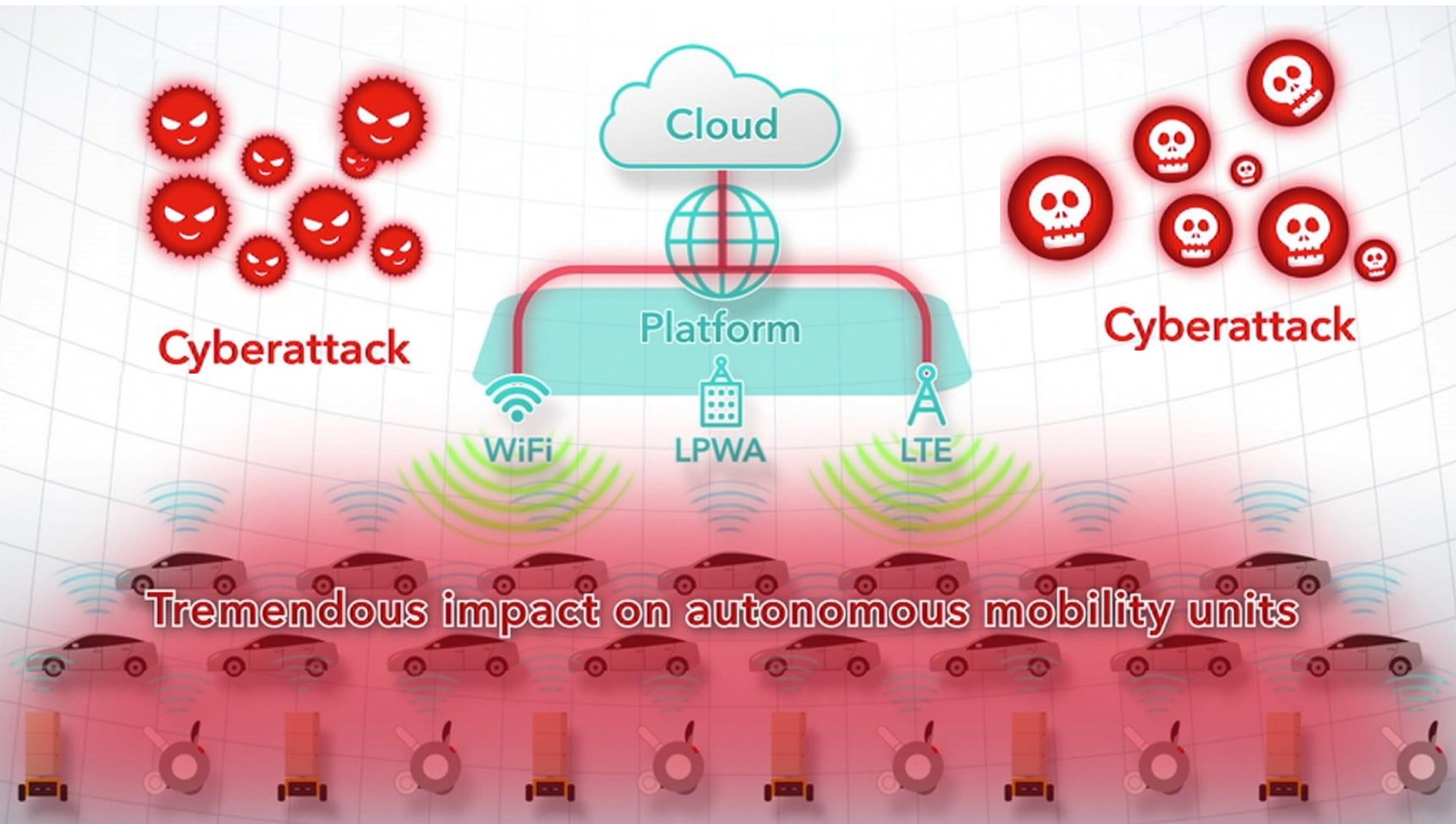


# **3. Abnormality detection and response system**

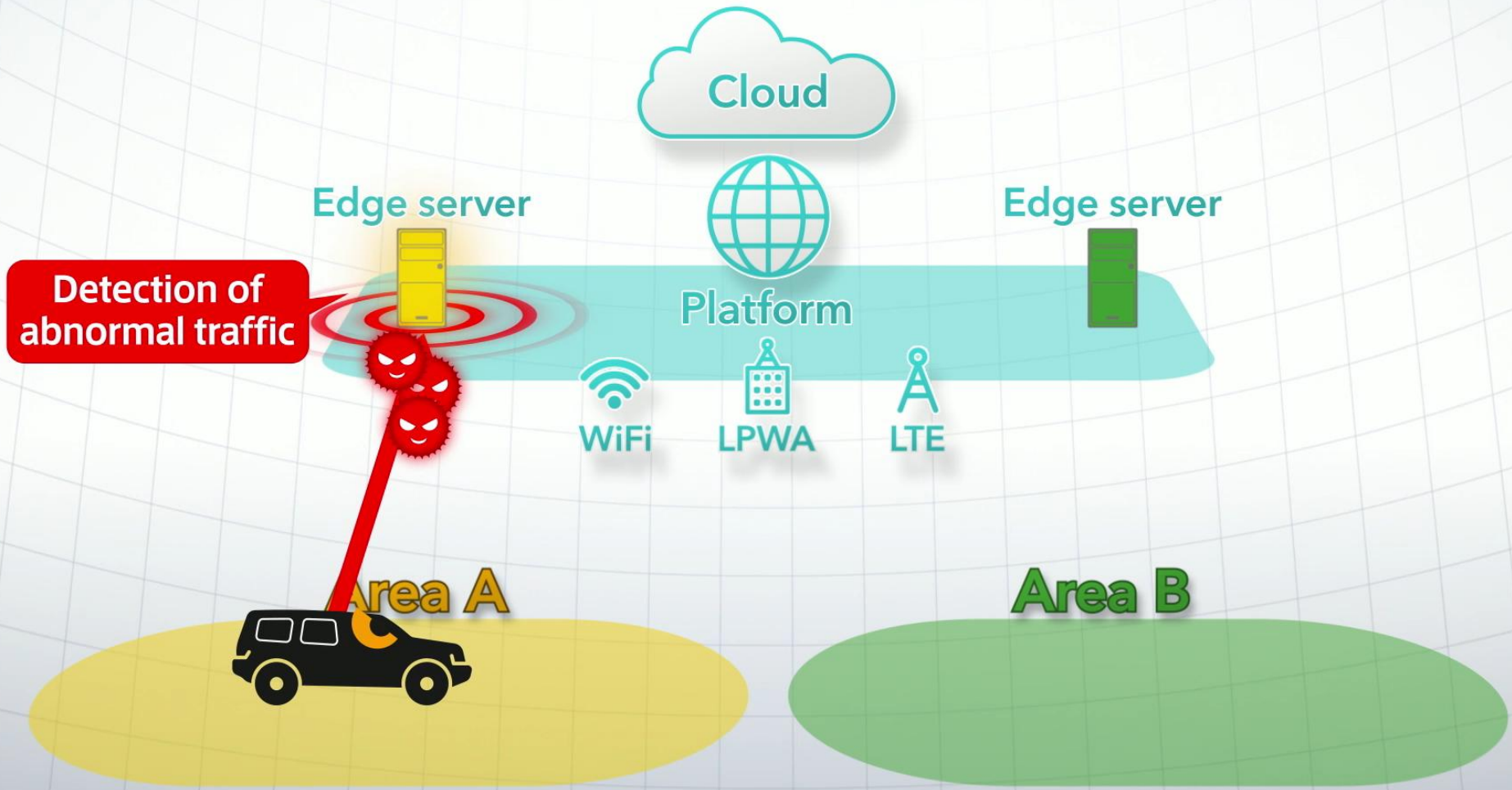
# - Abnormality detection and response system -



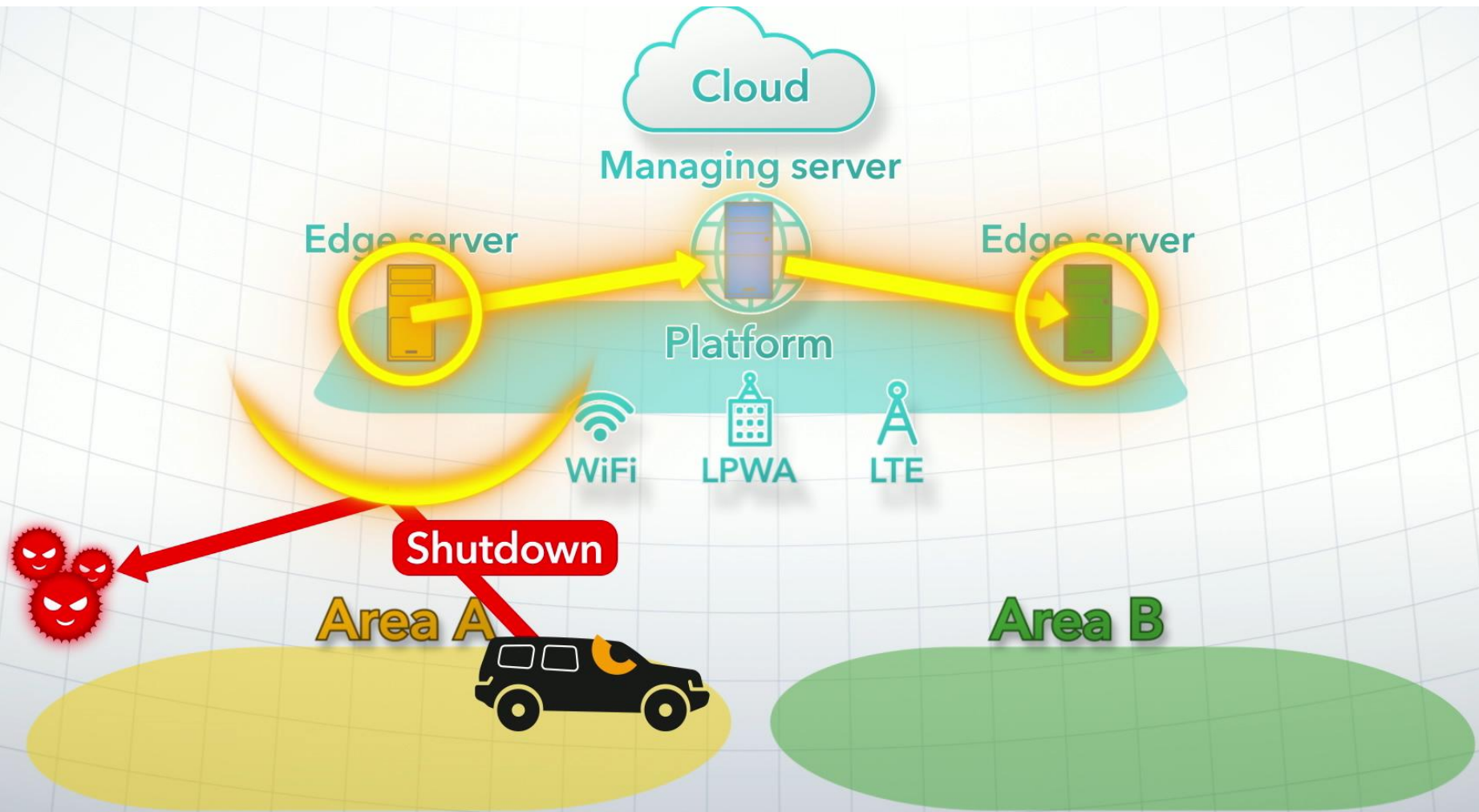
# – Abnormality detection and response system –



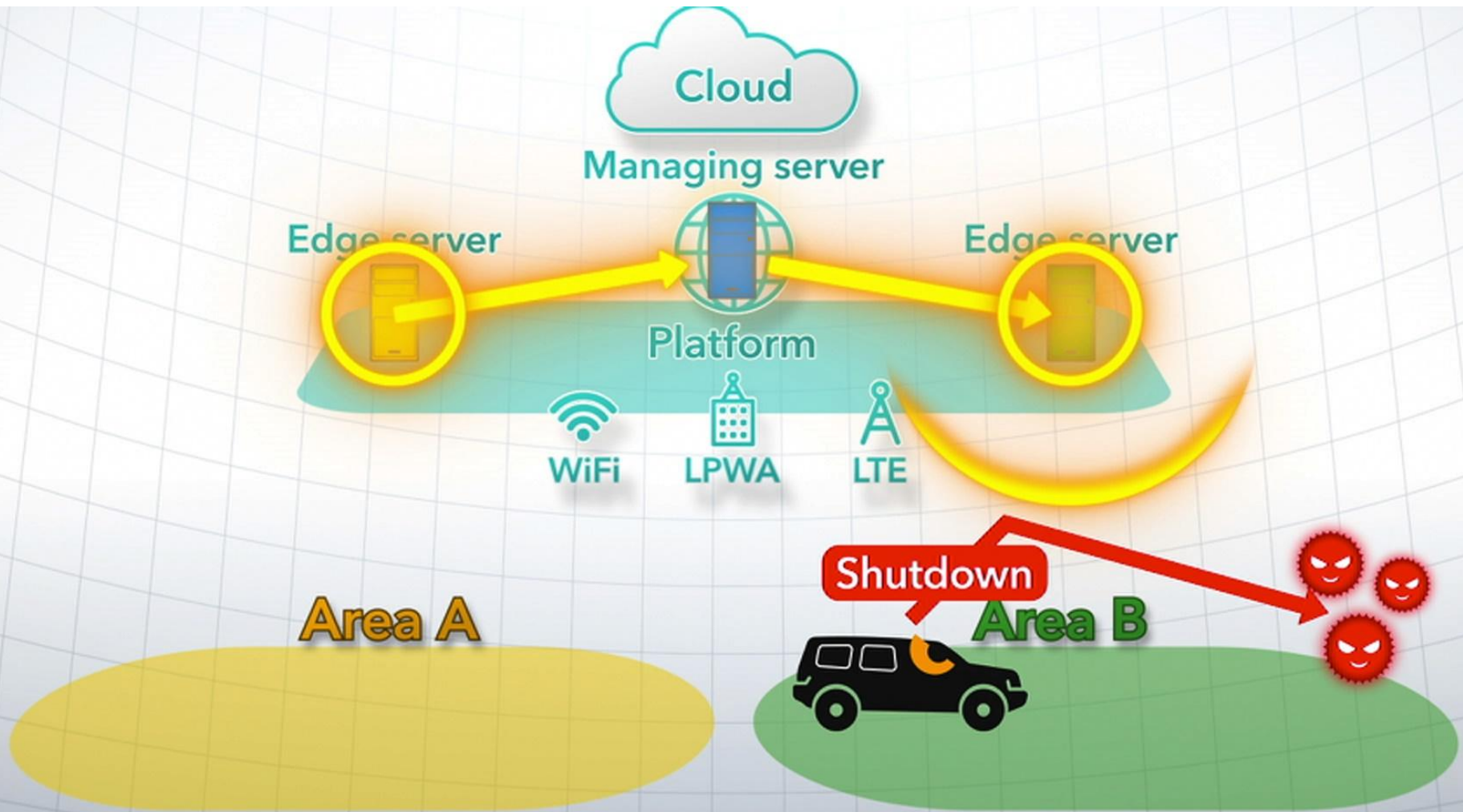
# – Abnormality detection and response system –



# – Abnormality detection and response system –

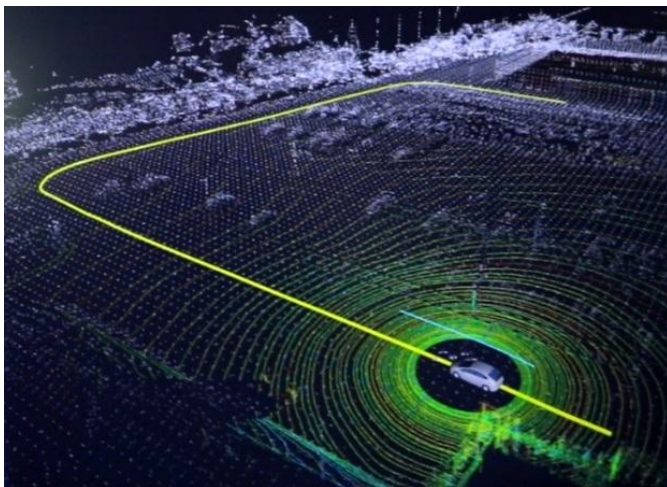


# - Abnormality detection and response system -





# – Demonstration at YRP (Oct. 11, 2017)





# Research and Development of Technology for the Efficient Use of Frequencies in Various Situations to Support a Huge Number of Autonomous Mobility Units

Implementing agencies

- Ministry of Internal Affairs and Communications
- Nippon Telegraph and Telephone Corporation
- NTT Advanced Technology Corporation
- Advanced Telecommunications Research Institute International
- Panasonic Corporation
- NTT DOCOMO, Inc.
- National Institute of Information and Communications Technology
- PASCO Corporation
- Hitachi, Ltd.

Trial period Fiscal 2017 to fiscal 2018