Application to Next-Generation Advanced Mobility of Wireless Charging and Information Display

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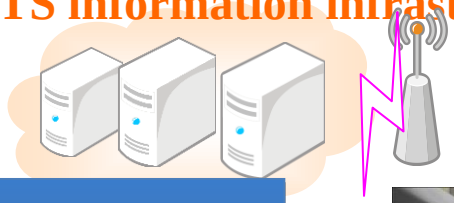
The automotive technology studies and development base

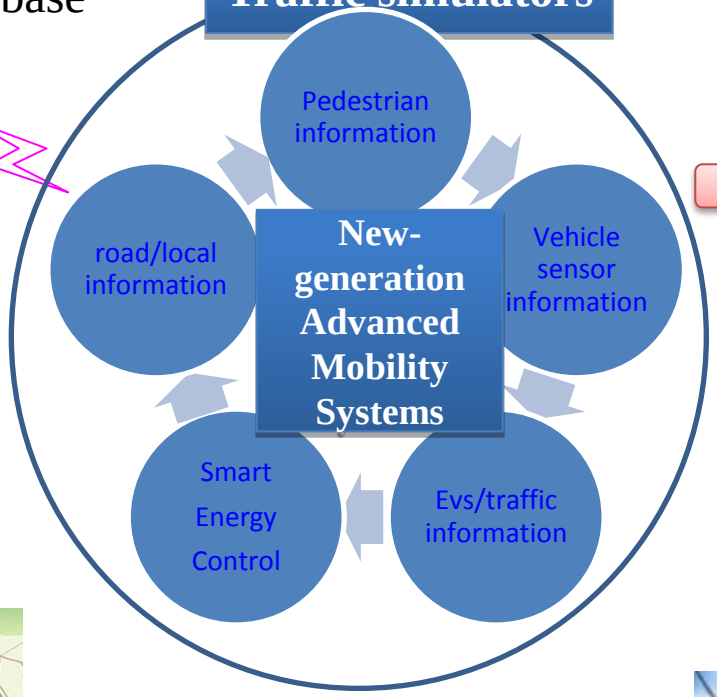
ITS information infrastructure



Traffic simulators

Traffic Experiment

New campus in Tohoku University



Earthquake disaster damaged area

comprehensive energy management of the city

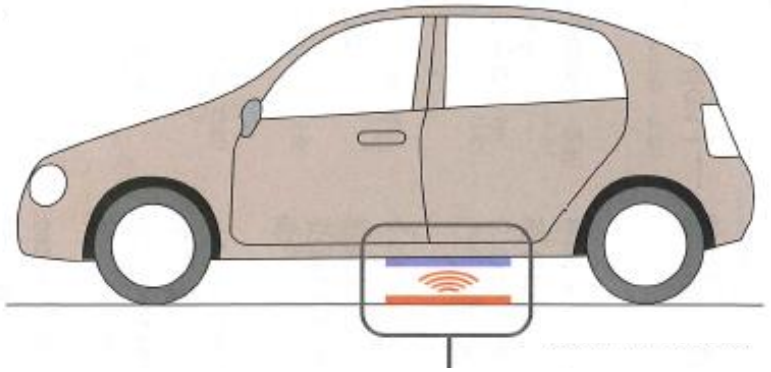
Information Display

EVs, EV buses

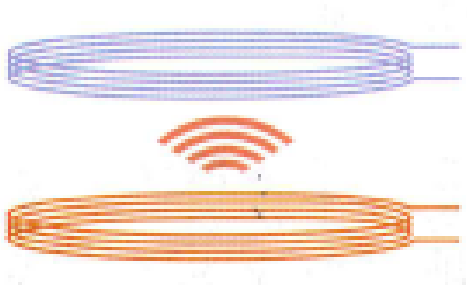
Wireless charging station

Demonstration experiment of the wireless charge

Outline of Wireless Charge



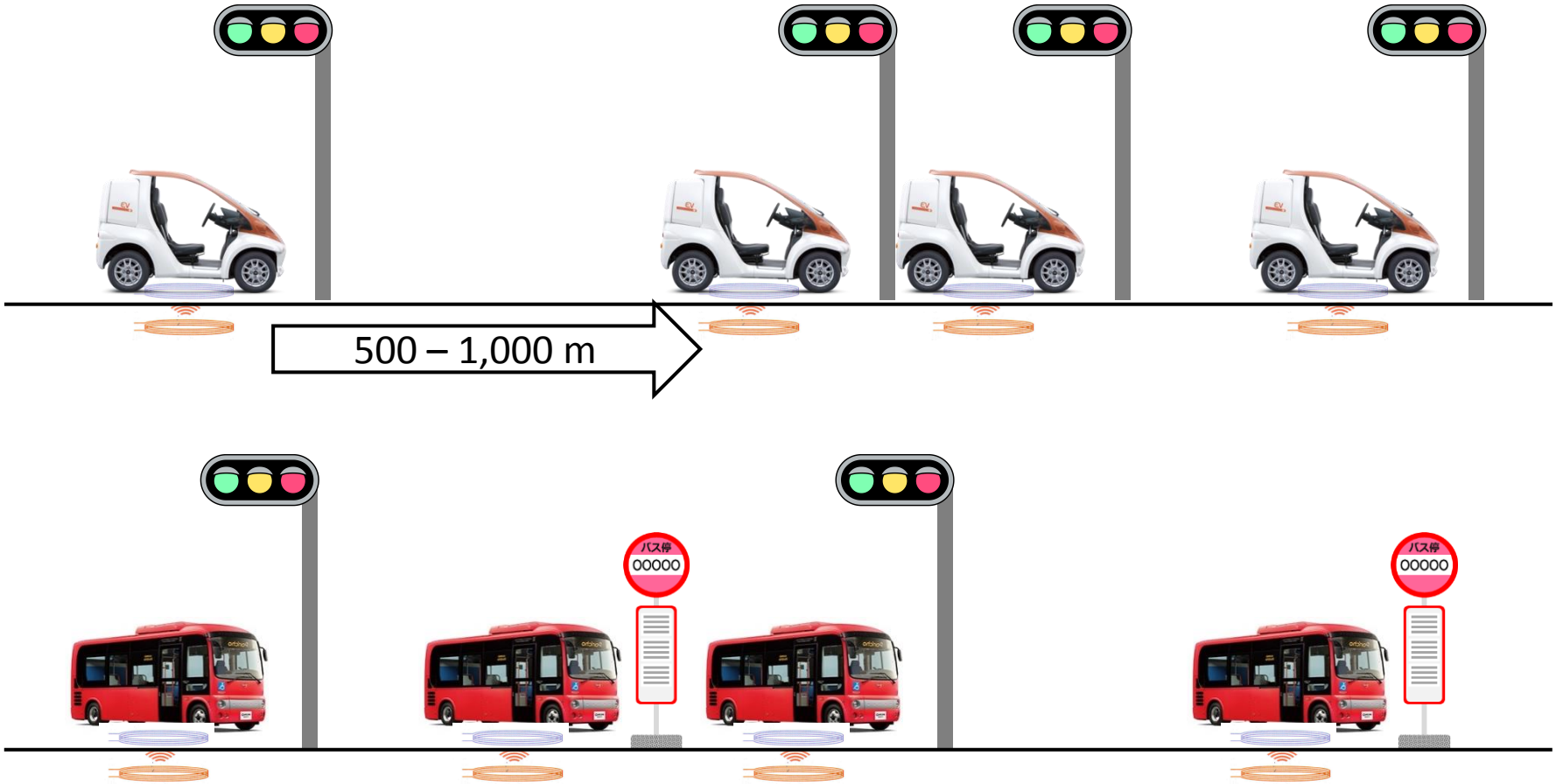
Electricity transmission by
the electromagnetic induction phenomenon



Receiver coil

Transmission coil

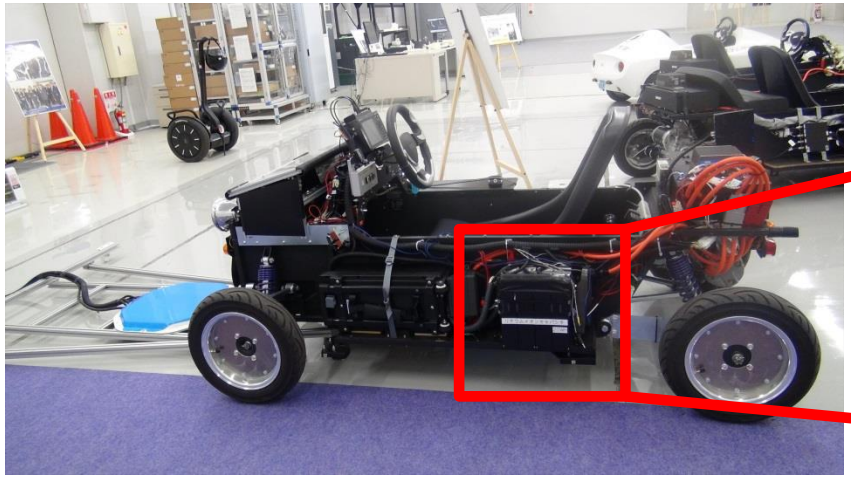
Concept of the frequently charging

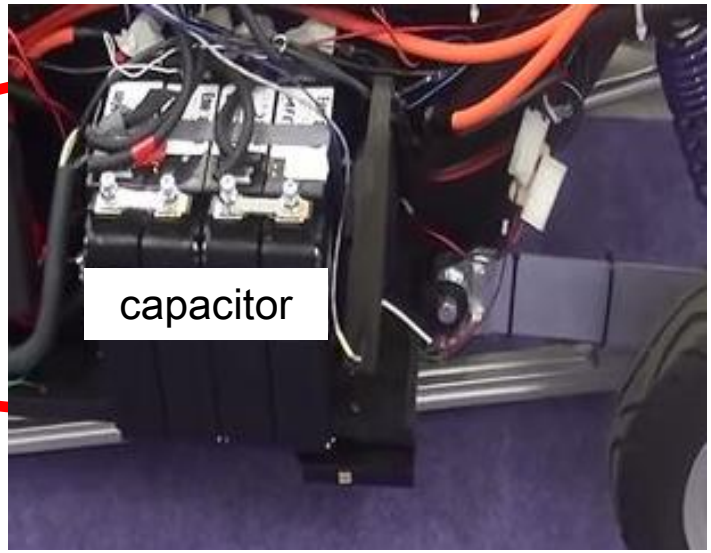


Extraordinarily rapid charging is demanded

Demonstration experiment of the wireless charge to CAPACITOR

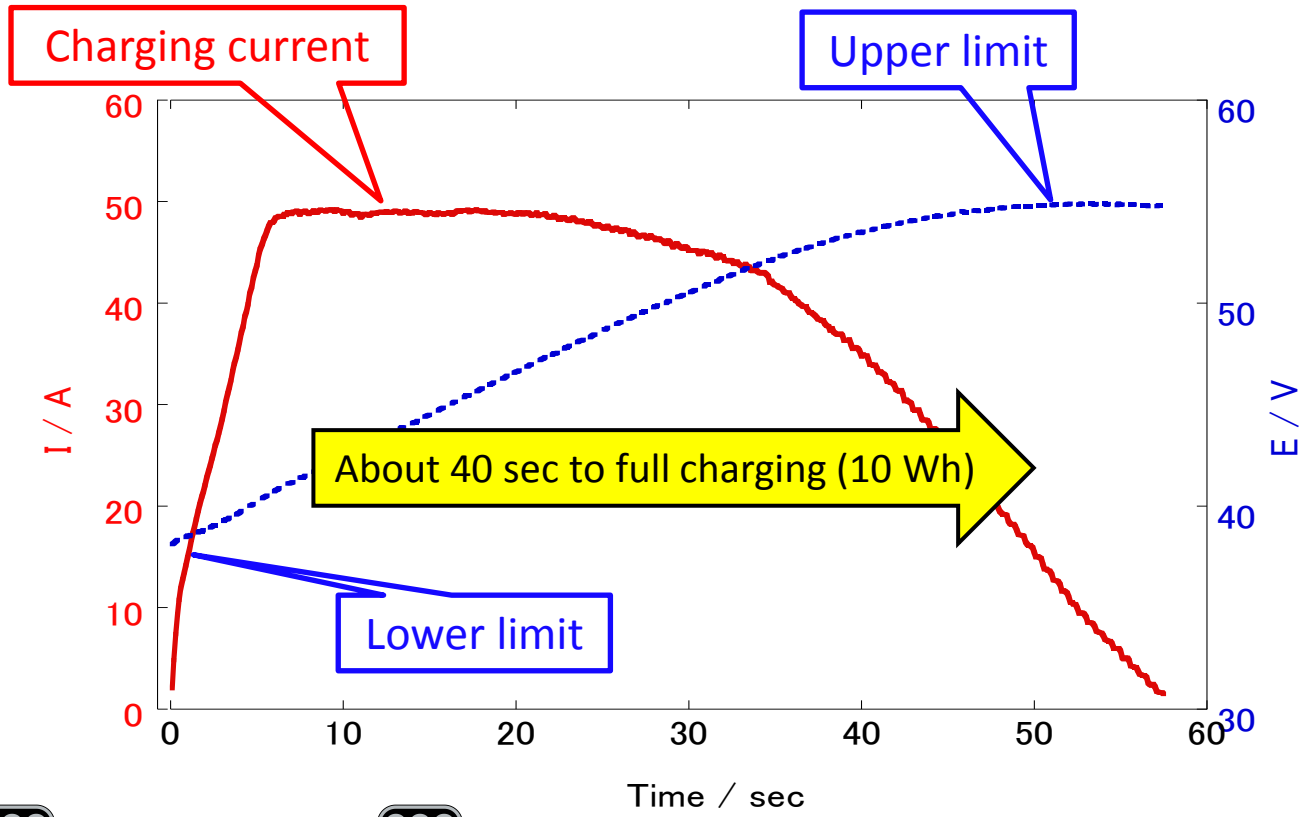
The capacitor is suitable for performing a little charging rapidly.

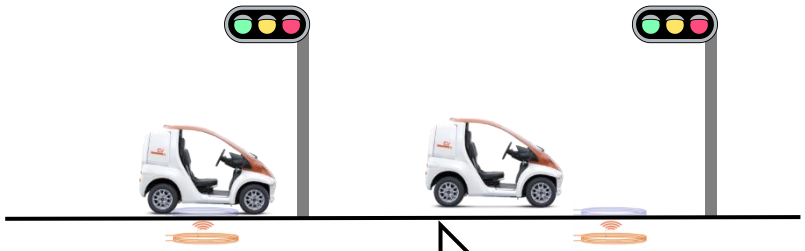




The capacitors were equipped to EV,
and wireless charging was performed.

Rapid charging to EV by using capacitors





10 Wh moves the car 400 – 500 m

Slightly short

The extension of the driving distance can realized by increase of the capacitor capacity and the increase of the charging current.

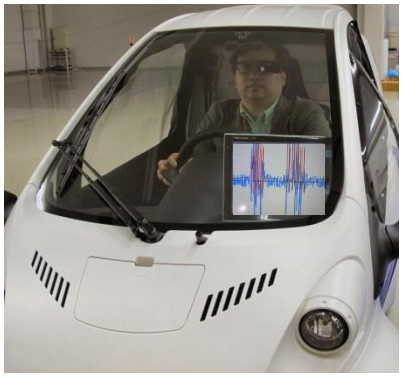
with Matsuki Lab.

Challenge to advanced information display to EV

Curved surface display on the dashboard

Display as information station

Real-time monitoring of the vehicle information



with Fujikake Lab.

The actual situation and approach of the information display for cars

Head-Up display for drivers

Information display for passengers

Paper is still used

One of proposal images to the future

Display makes dashboard see-through.

Head-up display navigation

Target information

Latent problem of the display for the car

At the time of a crash

Apparatus moves around the inside of car

Head of crew hits the apparatus on the dashboard

The display apparatus should be soft

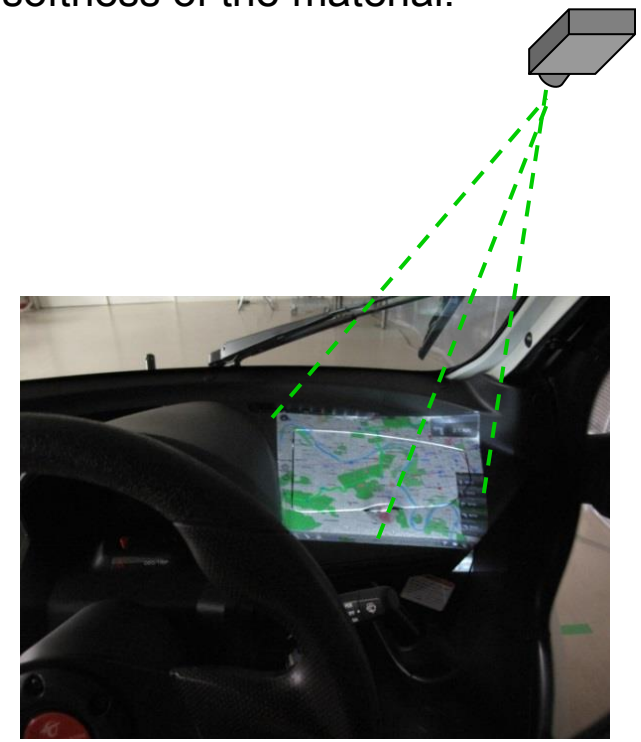
Application image of the flexible display

The soft flexible display is installed on the dashboard.

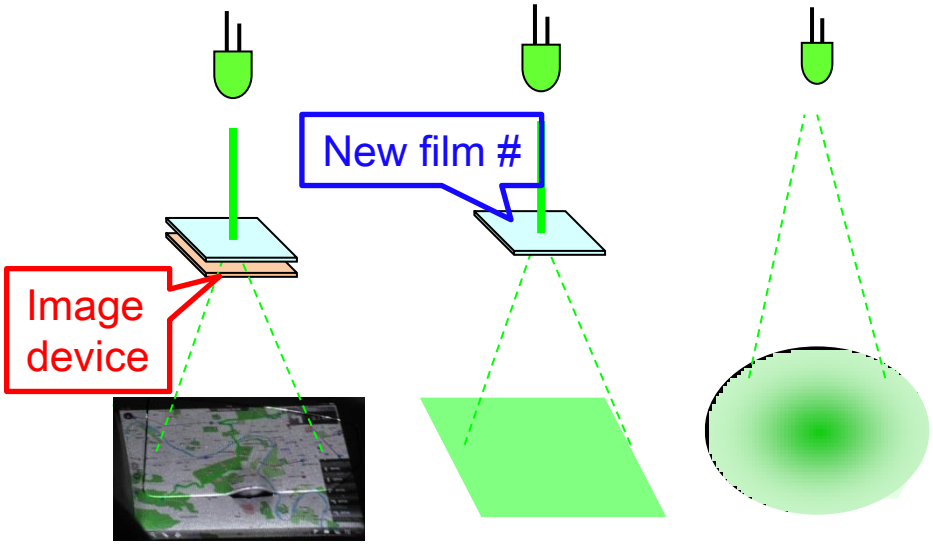
The display is installed in any place in the car.
Because the softness is not spoiled,
the protection of the crew will be kept at the time of the crash.

Challenge concept of projection display

Dashboard is made of soft material, for the ensuring safety at the time of the crash. The projection display does not change the softness of the material.



Quadrangle -formed light distribution will materialize hyper-micro projector



Ordinary light distribution of the LED

M. Nishizawa et al.,
Proceedings of the 18th International Display Workshops, (2011), 1385-1388.