

Providing advanced driving assistance information to help avoid congestion and hazards

Diverse services provided through a single onboard unit



Traffic congestion ahead can be checked at a glance, and the driver can choose to get off the expressway.

Roadside equipment



About **4,100** devices installed nationwide

ETC2.0 Onboard units

About **6.72** million

Cumulative total of all ETC setups as of July 2021

Speech-type units with GPS Navigation link type with GPS




You can obtain travel time information before reaching a branching point to avoid congestion on the Bay Shore Route and arrive at the airport in time.

A vehicle equipped with an onboard unit for ETC2.0 enables the driver to use not only the automatic toll payment service but also the state-of-the-art driving assistance service. The driver can obtain information on road traffic conditions well ahead of the vehicle in order to avoid congestion and hazards.

During snowfall

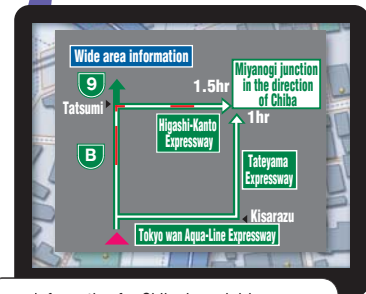


Snowfall at Maihara Junction.

During congestion



Congestion ahead! Beware of collisions.



Information for Chiba-bound drivers. About 60 minutes to Miyanoji Junction via Aqua-Line and about 90 minutes via Bay Shore Route.

Helping to improve logistics productivity

Using probe data to improve logistics operation management



Vehicle equipped with an onboard unit for ETC 2.0



Vehicle location information services enable time-of-arrival estimation.

Operator engaged in vehicle operation business



ETC2.0-collected data such as vehicle location information and vehicle travel history are provided to logistics business operators so that they can utilise those data for time-of-arrival estimation and vehicle deployment planning.

Identifying routes passable by special vehicles and simplifying and streamlining the routing permit application process

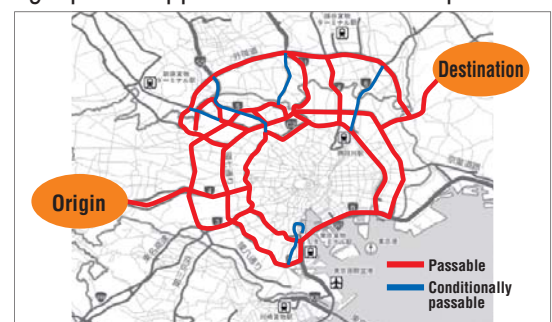
Current (permit) system

- The process from application to permit issuance takes about 30 days (FY2019).
- Only one route applied for and permitted may be passed (route-by-route application needed).

New system to be introduced

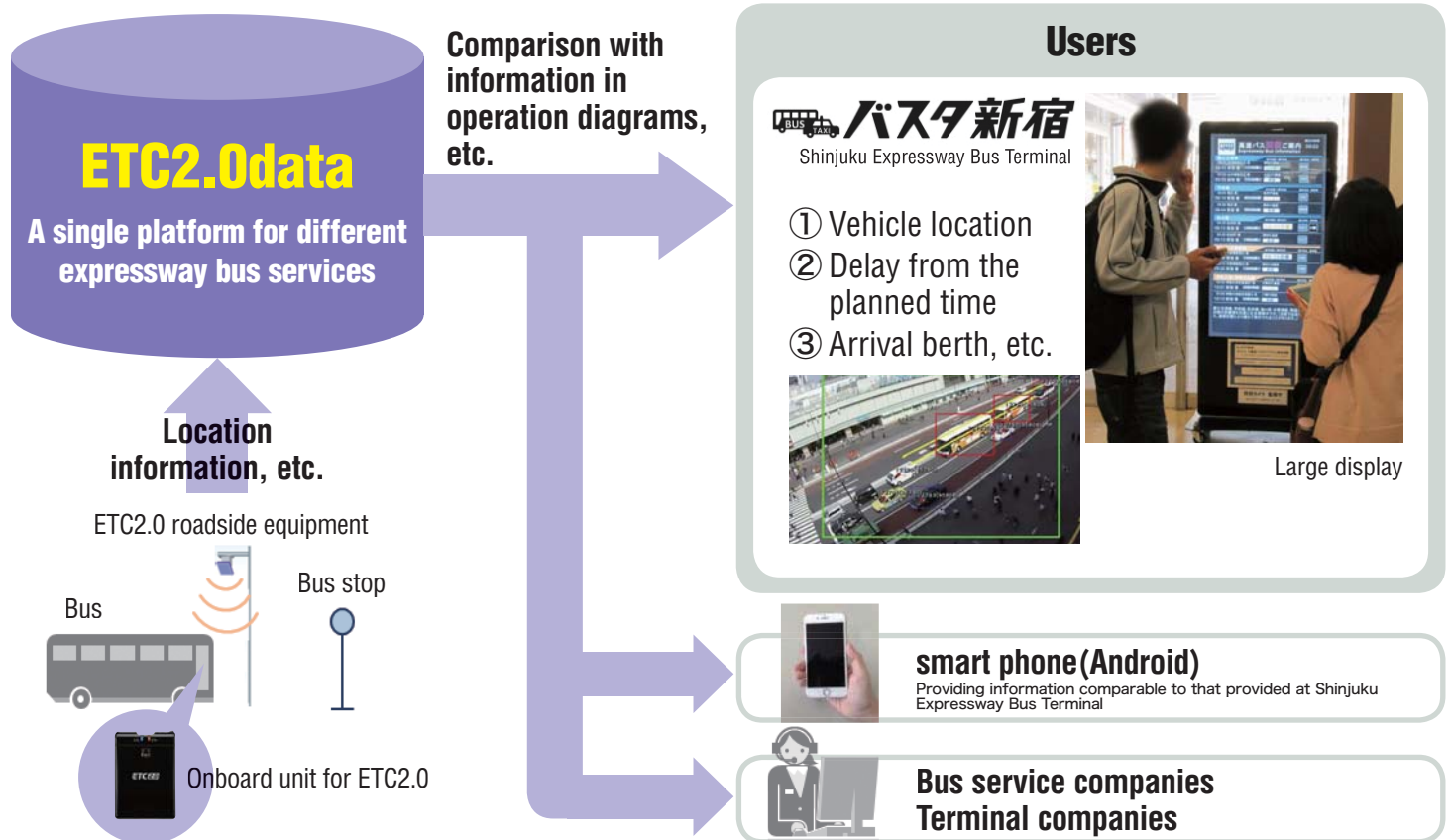
On condition of check for route information utilising ETC2.0, the following are possible:

- Prompt Web-based notification of passable routes
- Single permit application to cover multiple routes

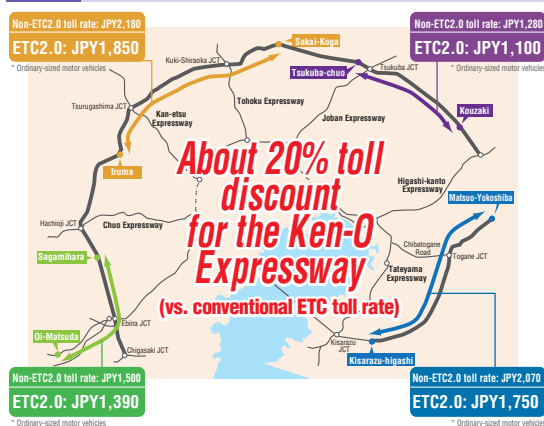


Utilising route information to improve convenience

Enhancing user services by streamlining bus operation management



Making flexible charging possible to mitigate urban-centre congestion



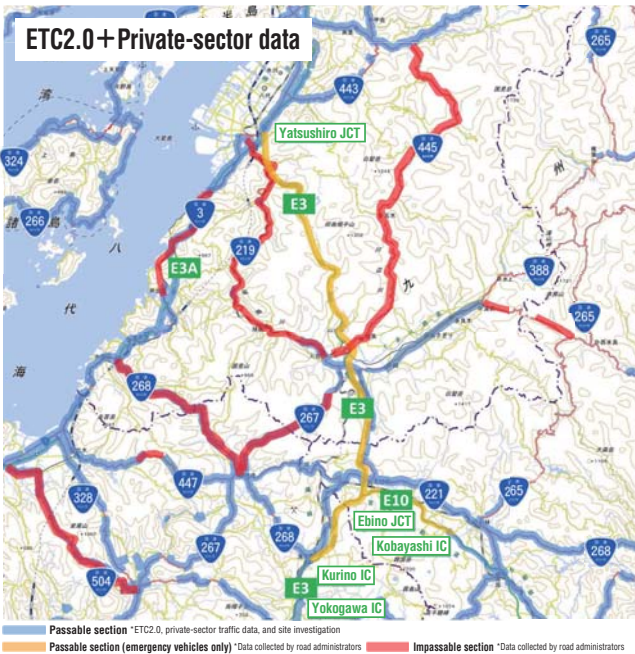
Vehicles equipped with an onboard unit for ETC2.0 that have detoured to the ring road (Ken-O Expressway) to avoid urban-centre congestion receive a 20-percent toll discount.



The number of vehicles that use the ring road has increased by 30 percent so that congestion on the urban-centre expressways is mitigated.

Big data to ensure safety

'Passable Road Maps' of disaster-affected regions to ensure traffic safety



Passable Road Map

Map (as of 14:00, 6 July 2020) made available when the southern part of Kumamoto Prefecture was hit by heavy rains in July 2020



Prefederal road in Kumamoto
Closed for more than four months

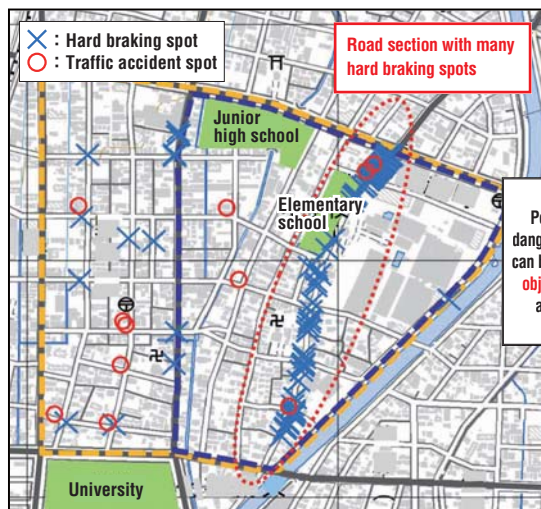


National Route 3
Closed for 14 days

By making effective use of available data such as ETC2.0-collected traffic data and private-sector probe data, 'Passable Road Maps' showing road passability information are made available in the event of a disaster to make prompt rescue and restoration activities possible.

Identifying dangerous spots on community roads so that safety measures can be taken

Utilising ETC2.0's big data to identify potentially dangerous spots (e.g., speeding, hard braking, and shortcuts)



Planning and implementing effective and efficient measures

Reducing vehicle speed




Speed humps
Road constrictions

Making space available for pedestrians



Coloured shoulder pavement

Providing obstacles at entrances



Rising bollards

Zone 30
(Prefectural Public Safety Commission)



● Traffic reduction measures
● Speed reduction measures
● Measures to preferentially make space available for pedestrians/bicycles

Assisting in the refinement of road traffic management

Utilising ICT and AI to mitigate regional congestion

Traffic analysis by using ETC2.0 probe data

▼It can be seen that traffic volume decreased and travel speed increased under the influence of the COVID-19 crisis. → congestion decreased



pre-COVID-19

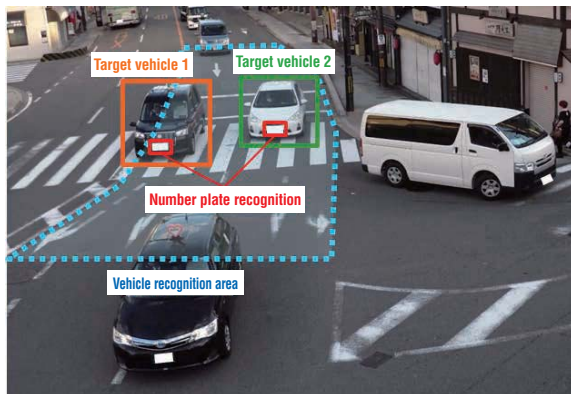


under the influence of COVID-19

● : slow vehicle
○ : fast vehicle

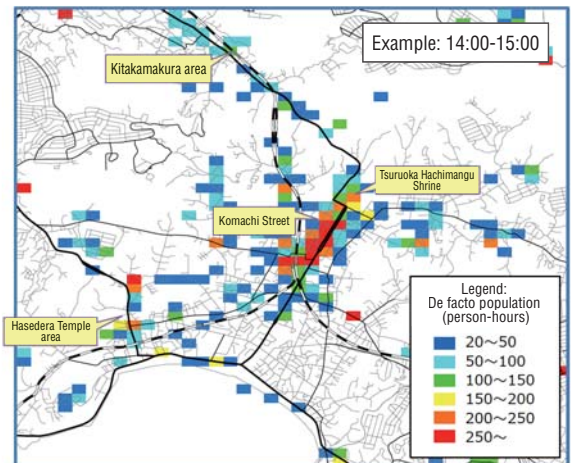
Combining ETC2.0 with other technologies to examine congestion mitigation measures

Number plate analysis utilising AI-assisted cameras



AI-assisted cameras set up at different points in an area read the number plates of vehicles passing those points so as to investigate the flow of vehicles entering and exiting the area by type of vehicle and analyse the traffic characteristics of the area.

People flow analysis utilising GPS data and portable base station data



People flows and touring characteristics are understood by analysing details such as the means of transportation used by visitors, entry/exit routes, visit time, visit duration, destination, and number of visitors.