



# Toyota to Provide Special Tokyo 2020 e-Palette Automated Vehicles for the Olympic and Paralympic Games

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Athletes at the Tokyo 2020 Olympic and Paralympic Games will be able to make use of a fleet of automated zero emission vehicles, specially adapted and supplied by Toyota.

The “Tokyo 2020” version of the Toyota e-Palette will run a loop service in the athletes’ villages, providing competitors and staff with a convenient, regular and easy means of getting around. Toyota reworked the design of its e-Palette – a multi-purpose, fully autonomous, battery-electric vehicle – using feedback from athletes to ensure it met their needs.

“Throughout the development process, athletes, especially Paralympians, helped us understand how the e-Palette could be adapted and upgraded to better meet their needs for simple, convenient and comfortable mobility,” said Takahiro Muta, the project’s development leader.

The Tokyo 2020 e-Palette has large doors and electric ramps so passengers can board easily and quickly. The vehicle will be controlled by an automated driving system and move at speeds up to about 12mph. Operation is at SAE level 41 (high automation), but a safety operator will be on board each vehicle to monitor performance and take control if required.

Toyota announced e-Palette in 2018, its first vehicle developed specifically for “autonomous mobility as a service” – Autono-MaaS – applications. It reflects Toyota’s ongoing transition to a mobility company, combining electrification, connected networks and advanced driving technologies to support new shared mobility businesses and business models.

The deployment of e-Palette is a key part of Toyota’s programme to provide advanced mobility solutions for Tokyo 2020, in its role as the first worldwide mobility partner of the Olympic and Paralympic Games. Toyota also plans to use the knowledge gained from e-Palette’s operation at Tokyo 2020 to further develop the vehicle for future mobility-as-a-service applications.

The e-Palette will be exhibited at Toyota’s booth at the 2019 Tokyo Motor Show, taking place from 23 October to 4 November.

## Tokyo 2020 e-Palette overview

### Designed for comfortable mobility

- Distinctive cuboid shape with front/rear symmetry and wheels located at each corner.
- Roomy, comfortable interior that reflects Toyota’s commitment to providing “Mobility for All” with handrails and seats that are easy to use, regardless of the occupant’s height. The floor, seats, trim and other components have contrasting colours to assist people with colour-blindness.

### **Quick and easy entry and exit**

- The e-Palette is equipped with large sliding doors, low floors, electric ramps and an Arrival Control system<sup>2</sup> so that passengers, including wheelchair users, can board and alight quickly and easily.
- A long wheelbase and flat floor allow the vehicle to carry up to four people in wheelchairs, along with additional standing passengers, at one time.

### **Low-speed automated driving and focus on safety**

- The e-Palette has a specially designed automated driving system that features control hardware, software and advanced sensors, including cameras and laser-operated LiDAR (light detection and ranging). Combined these with highly accurate 3D mapping and an operation management system, e-Palette can provide low-speed automated driving at SAE Level 4<sup>1</sup>.
- To support safe operation, e-Palette has external systems to alert others around the vehicle, including pedestrians, during automated driving. The front and rear lamps mimic human eye movements to inform pedestrians of the vehicle’s actions.
- The automated driving system constantly monitors the vehicle’s surroundings for obstacles through 360 degrees. Operating speed is appropriate to and in accordance with the surrounding environment. An on-board safety monitor will also check the vehicle’s movement and be prepared to take control if necessary.

### **Principal specifications**

Length (mm)	5,255
Width (mm)	2,065
Height (mm)	2,760
Wheelbase (mm)	4,000
Passenger capacity	Up to 20, including one operator/Up to four wheelchairs plus seven standing passengers
Range	approx. 93 miles (150km)
Speed	12mph (19km/h)

<sup>1</sup> SAE level information can be found [here](#)

2 This controls the vehicle so that it comes to a halt at designated boarding and alighting locations, with a minimal gap between the vehicle and stop.

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