

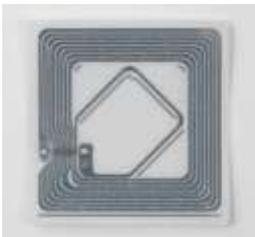
Mobility and Transportation

Cost, resource and energy efficiency gains for vehicle and transportation systems

3M has a breadth of [innovative solutions](#) to enable emission reduction of the transport network, to use and store energy in a better way, to make vehicles lighter, to reduce congestion and keep traffic moving through urban environments. 3M is involved in the development of batteries for electric cars, has developed Fuel Cell Membranes for Polymer Electrolytes and offers various solutions for significantly weight savings of vehicles. 3M also offers solutions in signage and markings to enhance road visibility, safety and environmental benefits as well as technologies to make city road users safer and help the traffic flowing smoothly through tolling systems.

Radio-frequency identification (RFID) reader:

One of the current challenges faced in the mobility and transportations sector, is the high level of congestion on certain roads or streets at certain times of the day. 3M produces several solutions based on passive Ultra High Frequency (UHF) Radio-Frequency Identification (RFID) tags, which control vehicle access and pollution in urban areas. These solutions, which already have a proven record outside Europe, **help to reduce traffic congestion and would also allow European cities to better manage their mobility and transportation.**



The RFID tag comes in the format of a sticker, which is attached to the vehicle's windshield. Each tag has a unique built in identification code, which wirelessly transfers electronically stored information to readers installed at specific locations on motorways, working as an electronic tolling system. When vehicles enter or exit the motorway, the RFID reader scans the tag and the car is classified according to its information housed in a secured database. The toll can be distance based or determined by other criteria defined by the customer's requirements, and automatically transacted through the appropriate account. This **enables real time fare calculations and optimizes the cost allocation of transport (time of day, mode of transportation) without the need for physical barriers.**

Apart from eTolling and road charging, the RFID technology can also be used in controlling access to better manage or avoid congestion or pollution, in enforcing speed limits, and in fraud prevention.

RFID tags can be purchased in post offices or banks, who will link the tag to the driver's bank account in accordance with applicable privacy and personal data protection regulations. Tourists may also easily purchase temporary low cost prepaid tags.

RFID tags are as equally reliable as comparable solutions available, and cost ten times less to produce. No maintenance costs are needed. The costs to the infrastructure and back office are comparable to other existing technologies, with the added value that the actual unit (sticker with special RFID) is the lowest known cost on the market.