

# Automated Vehicle

1990

2000

2013



Europe

**1996-2003**  
Chauffeur / Promote  
Chauffeur II



**2005-2009**  
KONVOI



**2008-2011**  
HAVE-it



**2009-2011**  
CITYMOBIL



**2011**  
ULTRA

**2009-2012**  
SARTRE



**2011**  
GCDC



Americas

**1939** Futurama



**1950's**  
GM Firebird 2



**1997**  
National Automated  
Highway System



**2003**  
PATH: Bus



**2004-2005**  
Grand Challenge



**2006-2007**  
Urban Challenge



**2008**  
ITS WC New York



Cooperative  
Autonomous Vehicle

**2010,2011**  
PATH: Truck



**2011**  
Safety Pilot



Asia-Pacific

**1970**  
Intelligent Vehicle  
(Japan)



**1996**  
Automated Highway System  
⇒Advanced Cruise-Assist  
Highway Systems (Japan)



**2005**  
Intelligent Multimode Transit  
System (Japan)



**2008-2012**  
Energy ITS  
(Japan)



# Road User Charging

**1980**

**2000**

**2013**



**Europe**

**1986**  
Toll Ring  
(Bergen)



**1989**  
Telepass  
(Italy)



**2000**  
Liber-t  
(France)



**2003**  
Congestion Charge  
(London)



**2005**  
Truck Toll System  
(Germany)



**2007**  
Stockholm Congestion  
Charge (Sweden)



**Americas**

**1989**  
Dallas North  
Toll Way



**1993**  
E-ZPass  
(New York)



**1995**  
California State Route  
91 Express Lanes



**1997** 407 ETR (Tronto)



**2006**  
txTag  
(Texas)



**2008**  
Good TO GO!  
(Washington)



SR167 HOT Lane



**Asia-Pacific**

**1993**  
Autotoll  
(Hong Kong)



**1998**  
ERP  
(Singapore)



**2000**  
City Link  
(Melbourne)



**2001**  
ETC  
(Japan)





























**2002**  
hi-pass  
(Korea)



**2008**  
ETC  
(Beijing)



# Traffic Management

	1960	1980		2000	2013	
 <p><b>Europe</b></p>	<p><b>1981</b> Dynamic hard shoulder (on motorways in the Netherlands, France, Germany, Italy, UK)</p> 	<p><b>1983</b> SCOOT (UK)</p>  <p>Typical SCOOT-based UTC System</p> 	<p><b>2003</b> Variable Speed Limit (on motorways in the Netherlands, France, Germany, Italy, UK)</p> 	<p><b>2006</b> Traffic Control Center Berlin (Germany)</p> 	<p><b>2009</b> DATEX II Traffic data exchange protocol (Europe)</p> 	
 <p><b>Americas</b></p>	<p><b>1961</b> Closed Circuit TV Traffic Monitoring (USA)</p> 	<p><b>1963</b> Ramp metering (USA)</p> 	<p><b>1980</b> First Freeways Traffic Management (Canada)</p> 	<p><b>1992-</b> FAST-TRAC: Field Operational Test program of Traffic Control (USA)</p> 	<p><b>1994</b> Establishment of the National ITS Architecture (USA)</p> 	<p><b>2000</b> Traffic Management (USA)</p> 
 <p><b>Asia-Pacific</b></p>	<p><b>1963</b> SCATS (Australia)</p> 	<p><b>1988</b> Green Link Determining System :GLIDE (Singapore)</p> 	<p><b>1995</b> Integrated Traffic Control Center (Japan)</p> 	<p><b>2005</b> Transport Management Center (Malaysia)</p> 	<p><b>2008</b> ITMC Beijing Intelligent Traffic Management Center (China)</p> 	<p><b>2010</b> Fully managed motorway (Australia)</p> 
	<p><b>1971</b> Traffic Control Center (Japan)</p> 	<p><b>1993</b> Freeway Traffic Management System (Korea)</p> 	<p><b>2004</b> i-transport (Singapore)</p> 	<p><b>2009</b> National Highway Management System (China)</p> 		

# Traffic Information

**1980**

**2000**

**2013**



**Europe**

**1988**  
Trafficmaster  
London (UK)



**1991**  
107.7 Traffic info  
Radio (France)



**1998**  
Journey time info  
on VMS (Europe)



**1998**  
TMC Service Traffic  
Message Channel  
(Europe)



**2011**  
Probe Data  
(Europe)



TomTom Live Traffic



**2011**  
TPEG Broadcast  
Service (Europe)



**Americas**

**Early 1990's**  
SmarTravelers



**1992**  
TravTek Field  
Operational Test



**1996**  
OnStar



**2005**  
Huston TranStar



**Asia-Pacific**

**1995**  
VICS Service  
(Japan)



**1998**  
Auto  
manufacturers'  
Telematics  
Service (Japan)



**1995**  
Travel times provided  
to the public (Australia)



**1999**  
TrafficScan  
(Singapore)



Taxi probe

**2005**  
Integrated Transport  
Information System  
(ITIS)  
(Malaysia)



**2006**  
TPEG Broadcast  
service (Korea)



**2005**  
VMS system  
(China)



**2008**  
RTIC  
(China)



**2009**  
SmartPhone  
Service (Korea)



**2011**  
Data Mall  
(Singapore)

