The European automotive industry is facing a digital revolution in the 21st century in the form of the connected and autonomous vehicle. With the integration of Internet of Things (IoT) components into vehicles, they become part of a network, enabling them to communicate with each other, with the surrounding infrastructure and with other drivers.

Different levels of automation

- **Monitored Driving**
  - Eyes on Hands on
  - Driver continuously exercises control

- **Conditional automation**
  - System assistance
  - Driver has to monitor the system at all times

- **Temporary hands off**
  - System control in specific use case

- **Non-monitored Driving**
  - Eyes off Hands off
  - Driver is not required during defined use

Increased automation has a positive impact on:

- Road safety
- Accessibility
- Sustainability

Mapping the value chain for connected and autonomous vehicles showcases its importance in the European automotive industry

High-level connected and autonomous vehicle value chain for the EU

- **Governed bodies & consortia**
  - Governing bodies, tech-focused automotive consortia, government-sponsored support action

- **IoT component providers**
  - Chips
  - Modules
  - Moderns
  - Sensors & cameras
  - Routes & gateways
  - Antennas & cables

- **Network operators**
  - Network infrastructure
  - Connectivity

- **End users**
  - Personal vehicle operations
  - Fleet owners
  - Ride-hailing
  - Rental vehicles
  - Ride sharing

- **Connected and autonomous car**
  - User data

- **Original Equipment Manufacturers (OEMs)**
  - Car manufacturers
  - Automotive suppliers

- **Vehicle data platforms**
  - Mobile services
  - Cloud services
  - Security management
  - Service orchestration

- **Application platforms & applications**
  - Application platforms
  - On board diagnostics
  - Fuel management
  - Infotainment
  - Navigation & location based software

- **Road operators and infrastructure**

The EU’s competitive position is particularly strong because of its focus on safety and diversity in its offerings.

The rise of connected and autonomous vehicles raises concerns to be addressed in the fields of security, reliability and environmental impact.

The Product Watch analyses novel products that are based on advanced technologies for the development of goods and services - enhancing their overall commercial and social value. It supports cluster organisations and S3 partnerships, providing intelligence on innovation areas where European regions could team up and invest together.

For more information, read the full Product Watch on IoT in connected and autonomous vehicles: https://ati.ec.europa.eu/reports/product-watch/iot-components-connected-and-autonomous-vehicles