



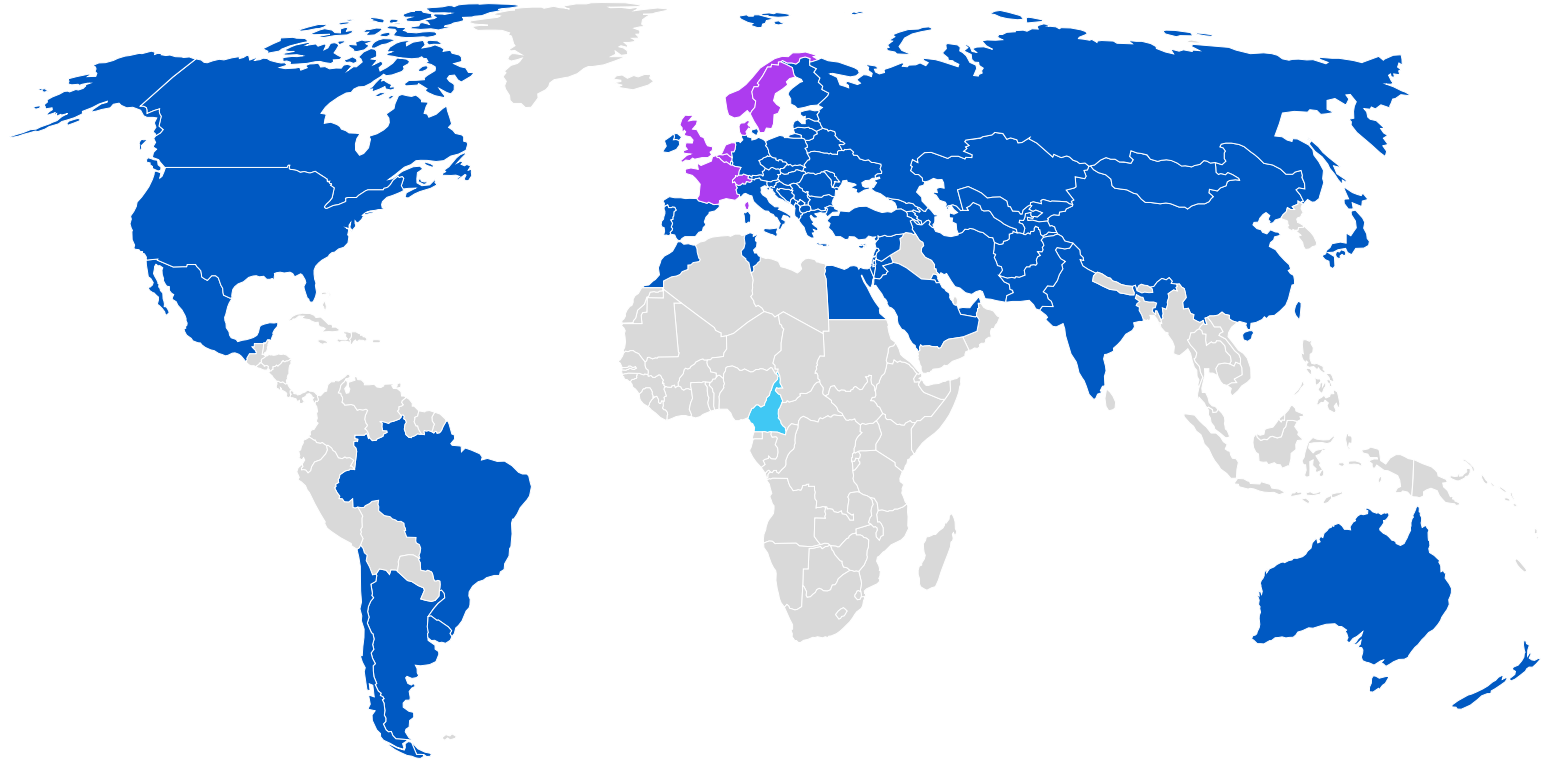
# Managing the transition to driverless road freight transport


**UNECE Working Party on Transport Trends and  
Economics Trends in the road transport sector**


Geneva, 4-6 September 2017

[iru.org](http://iru.org)

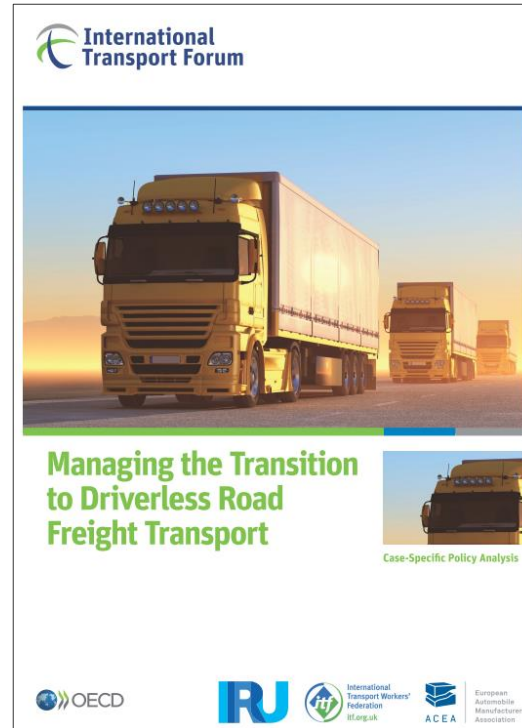
# Founding members in 1948



 14 Founding IRU Members in 8 countries

 IRU Members

# Governments, vehicle manufacturers, transport operators and trade unions join forces



# Level of automation



	Level	Name	Steering, acceleration, deceleration and signalling	Monitoring and responding to driving environment	Fallback performance of dynamic driving tasks	Context (operational design domain)
Driver performs part or all of the driving task	0	<b>No automation</b> the full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems				
	1	<b>Driver assistance</b> the context-specific execution by a driving automation system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task				Limited
	2	<b>Partial automation</b> the context-specific execution by one or more systems of both steering and acceleration/deceleration using information about the driving environment, and with the expectation that the human driver perform all remaining aspects of the dynamic driving task				Limited
System performs the entire driving task (when engaged)	3	<b>Conditional automation</b> the sustained context-specific performance by a driving automation system of all dynamic driving tasks with the expectation that the human driver will be receptive to requests to intervene and system failures and will respond appropriately				Limited
	4	<b>High automation</b> the sustained context-specific performance by a driving automation system of all dynamic driving tasks and fallback operation, without expecting a human driver will respond to a request to intervene				Limited
	5	<b>Full automation</b> the sustained and unconditional performance by a driving automation system of all dynamic driving tasks and fallback operation, without expecting a human driver will respond to a request to intervene				Unlimited

# Why will driverless trucks be taken up?

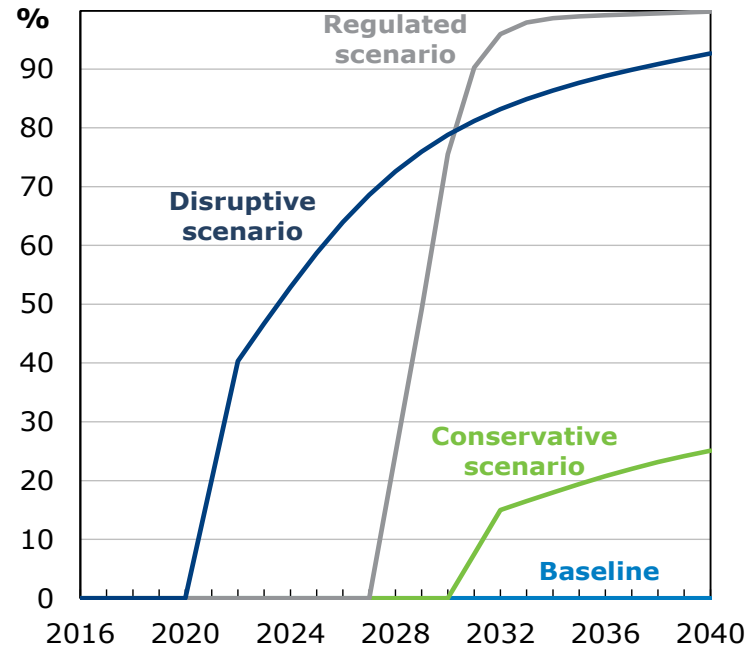


- Labour costs / addressing labour shortage
- Decarbonisation of transport
- Improvement of road safety
- Digitalisation of transport operations
- Operating times

# Driverless trucks - adoption scenarios



## Long distance road freight

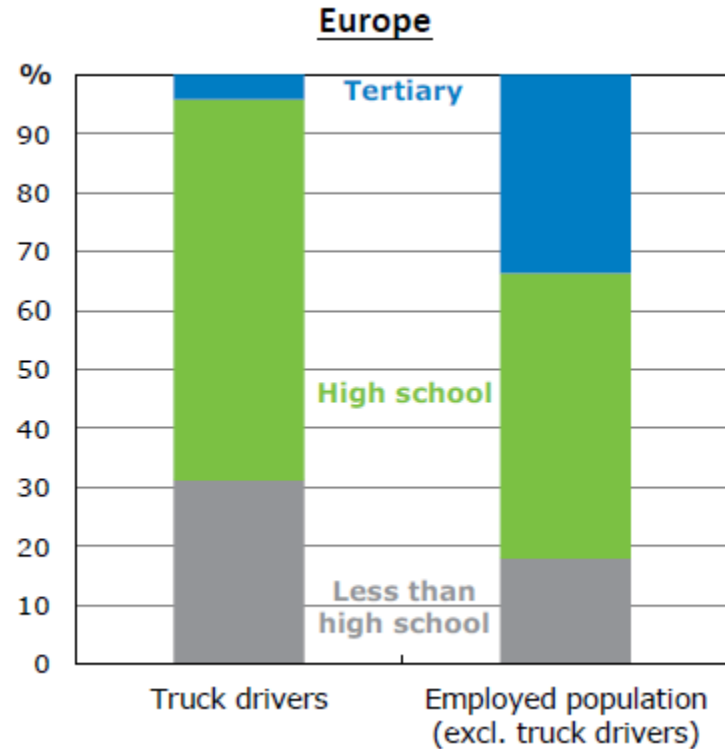
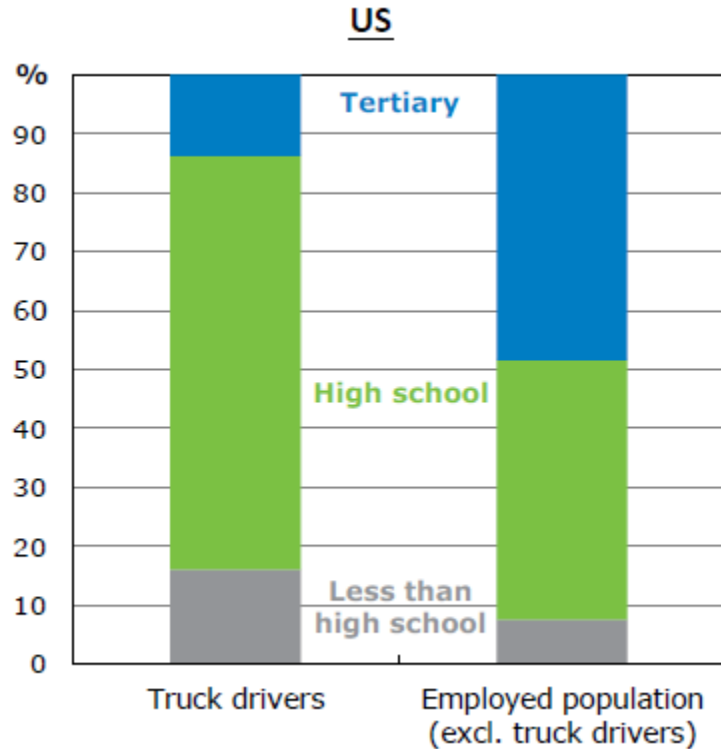


# Potential scale of truck driver job losses



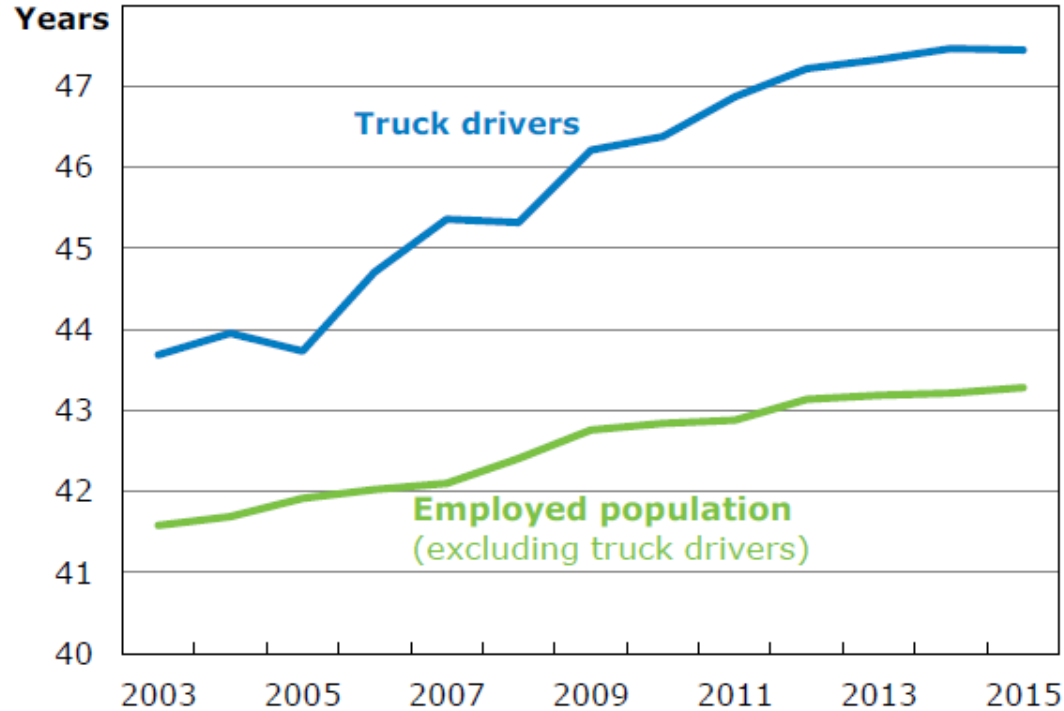
- Automated trucks could reduce the demand for drivers
- Up to 4.4 million professional trucking jobs could become redundant

# Truck driver labour force snapshot





# Truck driver labour force snapshot



# Where do we go from here?

## Certainty...

- Only a very few will keep their jobs in the transport industry
- New qualifications will be needed
- New trained professionals will be needed

## And...

- Who will pay for the transition?
- Will a gradual introduction of innovation solve the issue (permit systems)?
- Is new taxation on innovation a solution?

# Report recommendations – measures to be taken

- Establish a transition advisory board to advise on labour issues
- Set international standards, road rules and vehicle regulations for self-driving trucks
- Start with pilot projects to test vehicles, network technology and communication protocols

# Other open questions

- Security risks
- Road safety
- Acceptability of driverless vehicles
- Data ownership



Thank you!



[iru.org](http://iru.org)