Trainee's Answer

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Briefing on driveless cars  
Today is 16 November 20XX  
   
Introduction-Background information  
Automated vehicle technologies allow the transfer of driving functions from a human driver to a computer. Automation, and in particular digitalisation, of driving will change road transport in a way which is viewed as a revolution in the field of mobility and will create challenges. As human error is the main reason for road traffic accidents, driving which is automatically controlled by a computer is expected to make future road transport safer and more secure. It has also the potential to be more environmentally friendly, efficient and accessible. However, automated vehicle technologies require an effective regulatory and legislative framework that can foster European leadership and competitiveness, while addressing a number of legitimate concerns.  
1. Potentials and challenges of vehicle automation  
The potential impact of the deployment of automated vehicles has several aspects with technical, financial, economic, legal and ethical dimensions.   
Driverless cars will reform transportation as we know it by improoving our lives. Their adoption will slash accident and fatality rates, saving millions of lives. It will remove one-third to one-half of all vehicles from city streets because self-driving cars don’t need to park: they can continuously circulate, picking up and dropping off passengers.   
Eliminating human drivers will also allow automobile designers to build cars from a completely different mind set.The A.I. system driving the car will also reduce accidents to negligible levels. With no more need for steering wheels and other systems enabling human control, vehicles will be lighter and far more fuel-efficient.  
From economic aspect, car sharing will cost a fraction of what car ownership today costs. Owning a car for daily, personal transportation will seem impractical while workers could gain productive hours in the day by working instead of driving during daily commutes.  
Innovations in this field are also poised to completely change the car insurance industry by reducing accidents—a new report predicts that accidents will drop by 80% by 20XX+20  
At the same time policy makers, face challenges in designing the appropriate legal and regulatory framework so that new technologies are used properly and for the benefit of society.  
The rapid development of robots/automated cars might result in changes in the labour market through the creation, displacement and loss of certain jobs for example the replacement of corporate fleets for deliveries or transporting employees will push up the unemployment.   
Last but not least, the growing use of robotics raises ethical issues concerning privacy and safety. The new technologies raise questions as to how data privacy and cyber security will be addressed. The highly or fully automated vehicle will process data and make decisions: this raises ethical issues which have to be solved in a societal dialogue. The programmed algorithms will make decisions in conflicting situations, such as a choice between two unavoidable crash scenarios. How will the decision be taken? What 'best driving behaviour' should be reflected by the system? A possible solution could be a voluntary ethical code of conduct on robotics for researchers and designers to ensure that they operate in accordance with legal and ethical standards and that robot design and use respect human dignity.  
2. The different levels of automation and their deployment  
But, what does "autonomous driving" really mean? The US Department of Transportation's National Highway Traffic Safety Administration (NHTSA) defined five different levels of autonomous driving.The levels are six (0-5).  
Level 0 - Park Distance Control (already deployed): The system assists the driver to manoeuvre into tight spaces by communicating distance from obstacles by means of acoustic or optical signals.  
Level 1 - Park Assist (already deployed): The system automatically steers the car into parallel and bay parking spaces, and also out of parallel parking spaces. The system assists the driver by automatically carrying out the optimum steering movements in order to reverse - park on the ideal line. However, the driver has to operate the accelerator and the brake having the control of the car at all times.  
Level 2 - Traffic Jam Assist (already deployed): The function controls the vehicle longitudinally to follow the traffic flow in low speeds (lower than 30 km/h). The system can be seen as an extension of the Adaptive Cruise Control with Stop&Go functionality, i.e. no lane change support.  
Level 3 - Traffic Jam Chauffeur (already deployed): Conditional Automated Driving up to 60 km/h on motorways or similar roads. The system can be activated in a traffic jam scenario. It detects a slow-driving vehicle in front and then handles the vehicle both longitudinally and laterally. Later versions of this functionality might include lane change functionality.  
Level 4 - Highway Pilot (possible deployment 20XX+4): Automated driving up to 130 km/h on motorways or motorway-like roads from entrance to exit, on all lanes, including overtaking movements. The driver must deliberately activate the system, but does not have to monitor it constantly. The driver can override or switch off the system at all times. There is no request from the system to the driver to take over when the system is in its normal operation area on the motorway. Depending on the deployment of vehicle-to-vehicle communication and cooperative systems, ad-hoc convoys could also be created.  
Level 5 – The fully automated vehicle should be able to handle all driving from point A to point B, without any input from the passenger. According to ERTRAC only a rough estimation for possible deployment can be given: 20XX+10.  
   
3. Regulatory and legal frameworks, state of play  
Road traffic is a highly regulated area as it bears huge risks for all traffic users in public spaces. The automation of vehicles changes the driving risks in many regards and therefore requires an assessment of all traffic and vehicle related regulation. European mobility requires a harmonised approach towards these new technologies, while fragmented regulatory approaches would hinder implementation and jeopardise European competitiveness.  
One of the fundamental principles of the Vienna Convention is the concept, as laid down in Article 8, that a driver is always fully in control and responsible for the behaviour of a vehicle in traffic. The amended convention (20XX-1) still demands that every vehicle must have a driver. However, in the future it will be in accordance with the Convention that highly automated systems will have a driver who may take the hands off the wheel, but must be ready at all times to take over the driving functions, and who can override the system and switch it on and off. A further amendment process is therefore necessary to permit driverless vehicles. Systems with high or full automation are mostly still incompatible with the Vienna Convention because a driver may not be required in these systems, depending on the use case.  
The regulatory environment relating to cyber security, data privacy, and liability issues is of particular importance in the development of automated vehicles. Regulation of automated vehicles faces challenges to establish rules for technologies not yet applied. In particular, appropriate safety requirements have to be agreed. Traffic rules and the regulatory framework need to be adapted. In addition, it has to be decided how the safety of automated vehicles should be tested and by whom. The further development of vehicle automation will demand an adaption of driving education and licensing.  
EU Commission should be ready to propose rules on robotics and artificial intelligence, in order to fully exploit their economic potential and to guarantee a standard level of safety and security. As regulatory standards for robots are being planned in several countries, the EU needs to take the lead on setting these standards, so as not to be forced to follow those set by third countries.  
Traffic accidents have very large costs in economic terms, in particular regarding human lives or health, or regarding damage to an object. Liability law answers the question of who is responsible and who has to bear the costs of an accident. Relevant legislation is urgently needed to clarify liability issues, especially for self-driving cars. A mandatory insurance scheme and a supplementary fund to ensure that victims of accidents involving driverless cars are fully compensated is needed. In addition, a specific legal status for robots in the long run, should be established in order to identify who is liable if they cause damage.  
Regarding ethics the creation of a European agency for robotics and artificial intelligence, to supply public authorities with technical, ethical and regulatory expertise should be considered.  
4. Ongoing work in the EU  
In the European Union product liability is strongly harmonised by the Directive on liability for defective products (Council Directive 85/374/EEC). A producer is liable for any damage caused by a defect in his product; a product is defective when it does not provide the safety which the consumer is entitled to expect. However, there is currently no framework in place harmonising the rules on liability for damages caused by accidents in which motor vehicles are involved — the regulation of liability of the holder of a vehicle or of the driver differ between the Member States.  
Systems with high or full automation are mostly still incompatible with the Vienna Convention because a driver may not be required in these systems, depending on the use case.  
The debate on data privacy regarding connected automated vehicles is evolving in parallel with the new technologies. In general, digital services will be available in vehicles, as they are anywhere else. As third parties can access and use sensitive driver and driving data, legislation seems necessary to protect personal privacy of consumers in connected vehicles.The new General Data Protection Regulation establishes a single set of rules on data protection, also with regard to digital technologies, valid across the EU.  
The EP resently (16-03-20xx) voted a resolution for the establishment of EU legislation for the fast-evolving field of robotics, e.g. to enforce ethical standards or establish liability for accidents involving driverless cars. In addition, the European Commission promised dedicated funding, regulatory changes, cross-border agreements and innovation stimulus. The first step in a roadmap, was published by the Commission as part of its transport strategy last May, that could see driverless cars integrated with traffic by 20XX+10.

Human Evaluator

# Actual Overall Score

OVERALL SCORE: 7.3/10

# Actual Overall Summary

Overall Summary:   
Summary  
  
The text provides an in-depth look into the future of automated or driverless cars.   
It covers their potentials and challenges, different levels of automation, regulatory and legal frameworks, and the ongoing work within the European Union.   
The thesis appears to argue that driverless cars have transformative potential but require comprehensive legislation and ethical considerations.  
  
Suggestions for improvement:  
  
Organization: The text is relatively well-organized, with section headings that guide the reader through the complex topic. However, it could benefit from better transitional phrases to link different sections.  
  
Evidence support: The author discusses several aspects in depth but often doesn't provide sources or data to back up the claims.  
  
Grammar and mechanics: The document contains spelling and grammatical errors that need to be addressed.  
  
Per Competency Score

# Actual Communication Score

COMMUNICATION SCORE: 7.0/10

# Actual Communication Summary

Communication Summary:

# Actual Tips/Errors

Tips/Suggestions for Improvement (if any):   
  
  
Spelling/Grammar Errors (if any):   
Grammar and mechanics: The document contains spelling and grammatical errors that need to be addressed.  
  
Per Competency Scores  
  
Communication 7/10  
The layout is logical but could benefit from bullet points or numbered lists for easier reading.  
Information is communicated clearly for the most part, but the document would benefit from concise language and better transitions.  
  
Specifically titled Introduction section: Yes  
Specifically titled Conclusions section: No  
Specifically titled Recommendations section: No  
  
The tone is formal and academic, suitable for the subject matter.  
  
The document could benefit from better formatting to improve readability, perhaps including bullet points, numbered lists, or even infographics.  
  
Spelling:  
"improoving" should be "improving"  
"manoeuvre" should be "maneuver" (American English)  
"behaviour" should be "behavior" (American English)  
"programmed" should be "programed" (American English)  
"labour" should be "labor" (American English)  
  
Grammar:  
"It has also the potential" should be "It also has the potential"  
"face challenges in designing" should be "faces challenges in designing"  
"push up the unemployment" should be "push up unemployment rates"  
"which have to be solved" should be "that have to be solved"  
"an adaption of driving" should be "an adaptation of driving"

AI Evaluator

# Predicted Overall Score

Overall Score (out-off 10): 6.8

# Predicted Overall Summary

Overall Summary:  
Your briefing on driverless cars provides a good overview of the topic, covering the definition and functionality of driverless cars, their benefits, challenges, and current developments. You have included relevant information about the potential impact of driverless cars on safety, efficiency, accessibility, and the job market. Additionally, you have mentioned the different levels of automation and their deployment, as well as the regulatory and legal frameworks and ongoing work in the EU.  
  
Areas of Improvement:  
1. Content: While your briefing covers the main points, there are some areas where you could provide more specific examples or evidence to support your statements. For example, when discussing the benefits of driverless cars, you could mention specific statistics or studies that demonstrate the potential reduction in accidents and fatalities. Similarly, when discussing the challenges and concerns, you could provide more specific information about the legal and regulatory issues that need to be addressed.  
  
2. Clarity: Overall, your briefing is clear and easy to read. However, there are a few sentences that could be rephrased to improve clarity. For example, in the introduction, you could clarify that driverless cars are a form of automated vehicle technology. Additionally, in the section on the different levels of automation, you could provide clearer explanations of each level and their implications.  
  
3. Organization: Your briefing could benefit from a more structured organization. Consider dividing the content into sections with clear headings to make it easier for the reader to navigate and understand the information. For example, you could have separate sections for the benefits, challenges, and current developments of driverless cars.  
  
4. Referencing: It is important to properly attribute and reference any sources or information that you use in your briefing. Make sure to include citations or links to relevant studies, reports, or articles to support your statements.  
  
Overall, your briefing provides a good overview of driverless cars and covers the main points. With some improvements in content, clarity, organization, and referencing, your briefing could be even stronger. Keep up the good work and continue to refine your writing skills in the context of the EPSO exam.

# Predicted Communication Score

Communication Score (out-off 10): 7.0

# Predicted Communication Summary

According to the Notice of Competitions of current EPSO competitions, the only competency that will be assessed in the Case Study exam is Written Communication. Therefore, only this competency was assessed in your evaluation.  
  
Your answer provides a good overview of the potentials and challenges of vehicle automation. You have highlighted the benefits of driverless cars, such as improved safety, increased efficiency, and enhanced accessibility. You have also mentioned the challenges related to regulations, public acceptance, and job displacement. Your answer shows a good understanding of the topic and provides relevant information.  
  
One area where you can improve is the organization of your answer. It would be helpful to use headings or subheadings to clearly separate different sections of your answer. This would make it easier for the reader to follow your arguments and understand the structure of your response.  
  
Additionally, it would be beneficial to provide more specific examples or evidence to support your points. This would make your answer more convincing and demonstrate a deeper understanding of the topic.  
  
Overall, your answer is well-written and provides a comprehensive overview of the potentials and challenges of vehicle automation. With some improvements in organization and the inclusion of specific examples, your answer would be even stronger. Keep up the good work!

# Predicted Tips/Errors

TIPS/SUGGESTIONS FOR IMPROVEMENT:  
- Your answer provides a good overview of the potentials and challenges of vehicle automation. However, it would be beneficial to organize your answer into separate paragraphs for each point to improve clarity and readability.  
- When discussing the potential benefits of driverless cars, try to provide more specific examples or evidence to support your statements. This will make your answer more convincing and informative.  
- In the section on the different levels of automation, you have provided a good explanation of each level. However, it would be helpful to mention the source of this information (e.g. the US Department of Transportation's National Highway Traffic Safety Administration) to add credibility to your answer.  
- When discussing the regulatory and legal frameworks, try to provide more specific information about the current state of play in the EU. For example, you could mention any ongoing initiatives or proposed regulations that are relevant to the topic.  
- Overall, your answer demonstrates a good understanding of the topic. However, try to provide more specific examples and evidence to support your statements and improve the overall clarity of your answer.  
  
SPELLING/GRAMMAR ERRORS:  
- "improoving" should be "improving"  
- "car ownership today costs" should be "car ownership costs today"  
- "the deployment of automated vehicles has several aspects with technical, financial, economic, legal and ethical dimensions" should be "the deployment of automated vehicles has several aspects with technical, financial, economic, legal, and ethical dimensions"  
- "The A.I. system driving the car will also reduce accidents to negligible levels" should be "The AI system driving the car will also reduce accidents to negligible levels"  
- "car sharing will cost a fraction of what car ownership today costs" should be "car sharing will cost a fraction of what car ownership costs today"  
- "the new technologies raise questions as to how data privacy and cyber security will be addressed" should be "the new technologies raise questions about how data privacy and cybersecurity will be addressed"  
- "The highly or fully automated vehicle will process data and make decisions" should be "The highly or fully automated vehicle will process data and make decisions"  
- "The programmed algorithms will make decisions in conflicting situations" should be "The programmed algorithms will make decisions in conflicting situations"  
- "A possible solution could be a voluntary ethical code of conduct on robotics for researchers and designers to ensure that they operate in accordance with legal and ethical standards and that robot design and use respect human dignity" should be "A possible solution could be a voluntary ethical code of conduct on robotics for researchers and designers to ensure that they operate in accordance with legal and ethical standards and that robot design and use respect human dignity"  
- "The US Department of Transportation's National Highway Traffic Safety Administration (NHTSA) defined five different levels of autonomous driving.The levels are six (0-5)" should be "The US Department of Transportation's National Highway Traffic Safety Administration (NHTSA) defined six different levels of autonomous driving (0-5)"  
- "Level 0 - Park Distance Control (already deployed): The system assists the driver to manoeuvre into tight spaces by communicating distance from obstacles by means of acoustic or optical signals" should be "Level 0 - Park Distance Control (already deployed): The system assists the driver in maneuvering into tight spaces by communicating the distance from obstacles using acoustic or optical signals"  
- "Level 1 - Park Assist (already deployed): The system automatically steers the car into parallel and bay parking spaces, and also out of parallel parking spaces" should be "Level 1 - Park Assist (already deployed): The system automatically steers the car into parallel and bay parking spaces, and also out of parallel parking spaces"  
- "Level 2 - Traffic Jam Assist (already deployed): The function controls the vehicle longitudinally to follow the traffic flow in low speeds (lower than 30 km/h)" should be "Level 2 - Traffic Jam Assist (already deployed): The function controls the vehicle longitudinally to follow the traffic flow at low speeds (lower than 30 km/h)"  
- "Level 3 - Traffic Jam Chauffeur (already deployed): Conditional Automated Driving up to 60 km/h on motorways or similar roads" should be "Level 3 - Traffic Jam Chauffeur (already deployed): Conditional Automated Driving up to 60 km/h on motorways or similar roads"  
- "Level 4 - Highway Pilot (possible deployment 20XX+4): Automated driving up to 130 km/h on motorways or motorway-like roads from entrance to exit, on all lanes, including overtaking movements" should be "Level 4 - Highway Pilot (possible deployment 20XX+4): Automated driving up to 130 km/h on motorways or motorway-like roads from entrance to exit, on all lanes, including overtaking movements"  
- "Level 5 – The fully automated vehicle should be able to handle all driving from point A to point B, without any input from the passenger" should be "Level 5 – The fully automated vehicle should be able to handle all driving from point A to point B without any input from the passenger"  
- "Regarding ethics the creation of a European agency for robotics and artificial intelligence, to supply public authorities with technical, ethical and regulatory expertise should be considered" should be "Regarding ethics, the creation of a European agency for robotics and artificial intelligence to supply public authorities with technical, ethical, and regulatory expertise should be considered"