

## Benefits and Costs

***Feedback Guidelines:*** *We believe that the potential benefits and drawbacks analysis might include, but not be limited to, technology, market, environment, regulatory implications, transportation modes, etc. We hope that members can provide content on these aspects from their respective organisational perspectives.*

1. At this time, the GTR does not attempt to quantify costs and benefits for this first stage of ADS regulation. While the goal of the GTR is to enable increased market penetration of ADS vehicles, the resulting rates and degrees of penetration are not currently known or estimable. Therefore, a quantitative cost-benefit analysis is not possible.
2. Some costs might occur from greater market penetration of ADS vehicles. For example, building the infrastructure required to safely operate ADS vehicles might entail significant investment costs for the private and public sectors, depending on the country. Especially in the early years of ADS vehicle sales, individual purchasers, as well as manufacturers of ADS vehicles, are also likely to face greater costs than purchasers and manufacturers of conventional, non-automated vehicles. However, such costs incurred would essentially be voluntary as a market choice.
3. While some costs might occur, the contracting parties believe that the benefits of the GTR are likely to greatly outweigh costs. Widespread use of ADS vehicles, with the establishment of the necessary infrastructure, is anticipated to reduce the number of fatal and serious traffic accidents significantly. At the same time, emissions are expected to be reduced and traffic flow to be enhanced due to a conservative, predictable and considerate driving behaviour of ADS vehicles. It shall be noted that those benefits could be obscured by an increase of mobility and mileage. At the same time, however, the equal ability of all parts of society to be mobile must be seen as a major achievement of vehicle automation. The GTR might also speed up market penetration of conventional vehicles with traffic safety-related driver-assistance systems due to decreases in the associated sensor and technology costs or by benefiting from infrastructure elements, initially installed for ADS vehicle operation. Although not covered by this GTR, the GTR might create benefits in terms of the standardisation of traffic rules. The GTR might also increase vehicle safety in general by enhancing the capabilities of using virtual methods in the process of vehicle certification.
4. The contracting parties have also not been able to estimate net employment impacts of the GTR. The new market for innovative design and technologies associated with ADS vehicles might create significant employment benefits for those countries with ties to ADS vehicle production and associated technologies. On the other hand, employment losses associated with the lower production of conventional vehicles and in the professional driving sector could offset those gains. The building and retrofitting of infrastructure needed to support the introduction of ADS vehicles might generate net additions to the job market.