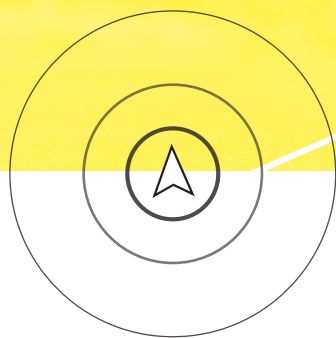# Safety Priority Services
## Results 2022-2024

Scaling up and continuation

The Safety Priority Services initiative (2022-2024) with partners ANWB, Be-Mobile (Flitsmeister), KIA, Hyundai, INRIX, and TomTom successfully launched in 2022. Together, they deliver the following use cases:

Traffic Jam Ahead Warnings: When there is a significant speed difference between your own vehicle and the last vehicle in a traffic jam further along your route, you receive a Traffic Jam Ahead Warning to reduce speed. Unlike, for example, the matrix signs above the road, not every road user at that location and at that moment receives a warning: only if the speed difference poses a danger. Warnings can be given on all roads: on highways, as well as on provincial or municipal roads.

Emergency Vehicle Approaching (EVA): You receive a warning when an emergency vehicle is approaching and you are informed from which direction the emergency vehicle is coming. This ensures you are not surprised by the emergency vehicle and you can prepare to make way or adjust your speed.
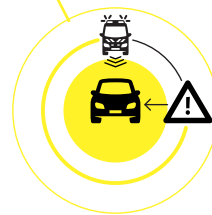
Safety Related Traffic Information: You are warned, among other things, about temporary slippery road surfaces, short-term roadworks, wrong-way drivers, and unattended blockages of a road.

Traffic Laws: you receive customized in-car information about the applicable maximum speeds, matrix signs above the road (lane closures), and other useful information such as environmental zones and school zones.
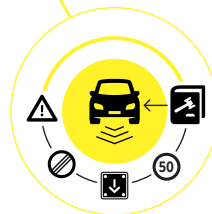
Now that the duration of the Safety Priority Services initiative has officially ended, this factsheet reflects on the results achieved. It also looks ahead to the period following Safety Priority Services.

User insights

Added value of safety priority services
When asked about the overall opinion regarding safety priority services, 85% of the respondents indicate that the services improve safety. Approximately 80% of the respondents find the quality and reliability to be good. Furthermore, about 75% of the respondents acknowledge the warnings for hazardous situations. These figures are based on the most recent surveys. It is not possible to conclude whether personal satisfaction is increasing or decreasing, as different people are surveyed each quarter. However, the high valuation of safety priority services sends a positive signal.

Traffic Jam Ahead Warning benchmark
Digitally generated Traffic Jam Ahead Warnings are just as accurate for recipients as traditional traffic jam notifications based on induction loops and matrix signs.

This is because in-car notifications indicate traffic jams at the same time and location as the overhead matrix signs. Moreover, these warnings remain effective even in the absence of matrix signs above the road.
User insights from surveys show that drivers tend to adjust their speed and drive more attentively after receiving an in-car notification. This insight is now further supported by measured behavior. An SPS partner conducted a study to examine the direct relationship between a Traffic Jam Ahead Warning and subsequent speed reduction. The data reveals a slight decrease in speed just before the warning, followed by a more significant reduction after the notification—an effect that aligns with the intended goal. However, it is not yet possible to conclude that the notification is the sole cause of this speed reduction, as other factors may also contribute. Nevertheless, the findings confirm that the

warning is displayed at an appropriate moment and that most drivers reduce their speed immediately after receiving it.
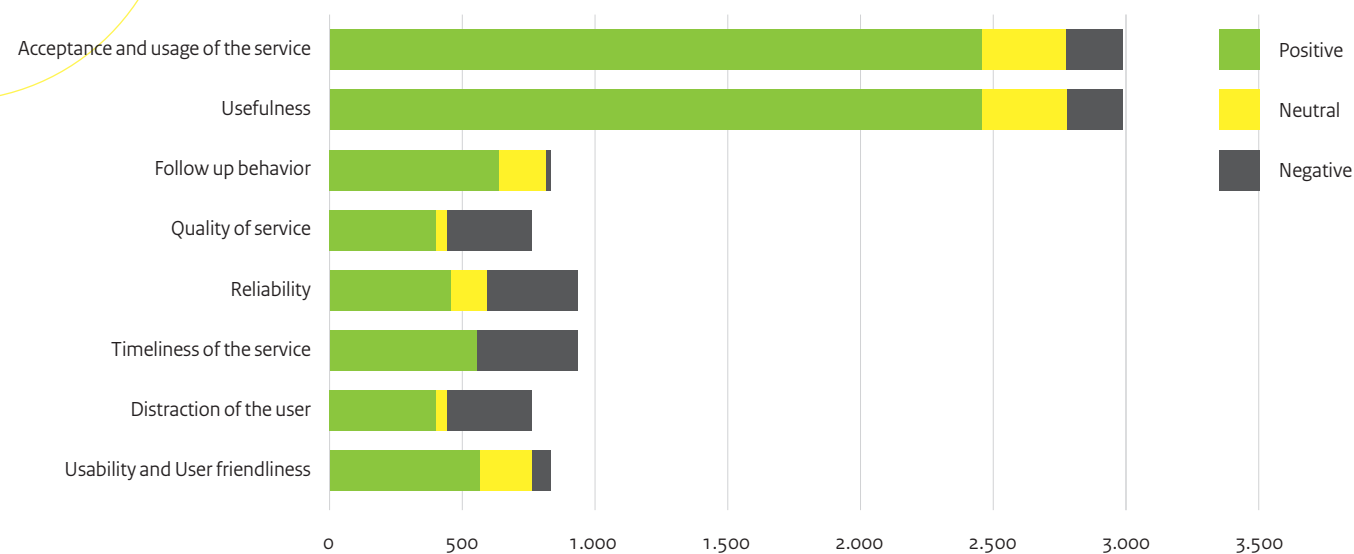
Improved warning for Emergency Vehicles Approaching (EVA)
User insights indicate that notifications can be perceived as distracting when their relevance is unclear. For example, this may occur when drivers receive a warning about an approaching ambulance but do not see it because their route does not intersect with the ambulance's path.
Based on user feedback, service providers have optimized the functionality of their EVA warnings. Notifications are now issued at a shorter distance

between the ambulance and the road user receiving the alert. Survey results show that up to 100% of drivers who received a warning subsequently saw the ambulance. Among this group, 84% indicated that they made way for the ambulance in response to the notification.

Emergency Vehicle Approaching (ambulance)

Category	Positive / Neutral / Negative
Acceptance and usage of the service	
Usefulness	
Follow up behavior	
Quality of service	
Reliability	
Timeliness of the service	
Distraction of the user	
Usability and User friendliness	

Legend: Positive (green), Neutral (yellow), Negative (grey)

Feedback

A key aspect of this collaboration is improving public data. Based on feedback from service providers, several enhancements have been implemented. Notable feedback from service providers includes the following:
- Inaccurate road closure data: The input for road closures does not always match the actual start and end points, causing discrepancies. As a result, road closures may appear longer than they actually are. A more precise input from the road authority is needed to resolve this issue.
- Duplicate event-IDs across different locations: In some cases, the same event-ID is assigned to different locations. To address this, adjustments have been made to VCNL's work processes, ensuring that a new message is generated instead of linking an existing event-ID to a new location.
- Multiple messages for the same event: Feeds often contain multiple messages about the same event, whereas service providers prefer a single, unified message per event, composed of different components. This would enable better message correlation, merging, and contextualization. Achieving this requires the development of a roadworks backbone (development within the NDW backbone).

The following improvements have already been made:
- The VCNL process for road closures has been adjusted, now clearly indicating whether a lane is completely closed or whether traffic can still use the hard shoulder.
- The handling time of incidents by recovery companies is indicated more accurately: the automatic logout time has been changed from 75 to 25 minutes.
- In development: the start and end times of roadworks with closures will be indicated more precisely. This involves utilizing Floating Car Data.

More road users safer on the road

Throughout the SPS initiative, the number of road users utilizing these services has increased. This growth is driven by several factors. Firstly, more service providers now offer these services. Secondly, all safety regions (veiligheidsregio's) are now connected to the EVA service. Lastly, road users themselves are making greater use of these services.

More services provided
In Safety Priority Services, the remuneration for the services "Traffic Jam Ahead Warning " and " Emergency Vehicle Approaching " were aligned with the number of vehicle kilometers delivered. As a result, this remuneration system is now much more strongly linked to the scale of (plausible) outcomes delivered. It also prevents public funds from being invested in developments that do not or hardly result in actual returns. This approach has been well received and will be implemented as much as possible in future projects.
Service providers also welcomed this compensation model. Simply making high-quality public data centrally available is not sufficient to drive the development of these Safety Priority Services. The financial incentives also motivated partners to implement these services in the Netherlands, even though the underlying data is scarcely available outside the country.

All services within scope are provided by one or more partners. In 2024, the following expansions were achieved:
- Kia has realised the EVA service in 2024. It is being rolled out step by step across their connected vehicles.
- Hyundai has realised the EVA service in 2024. It is being rolled out step by step across their connected vehicles.

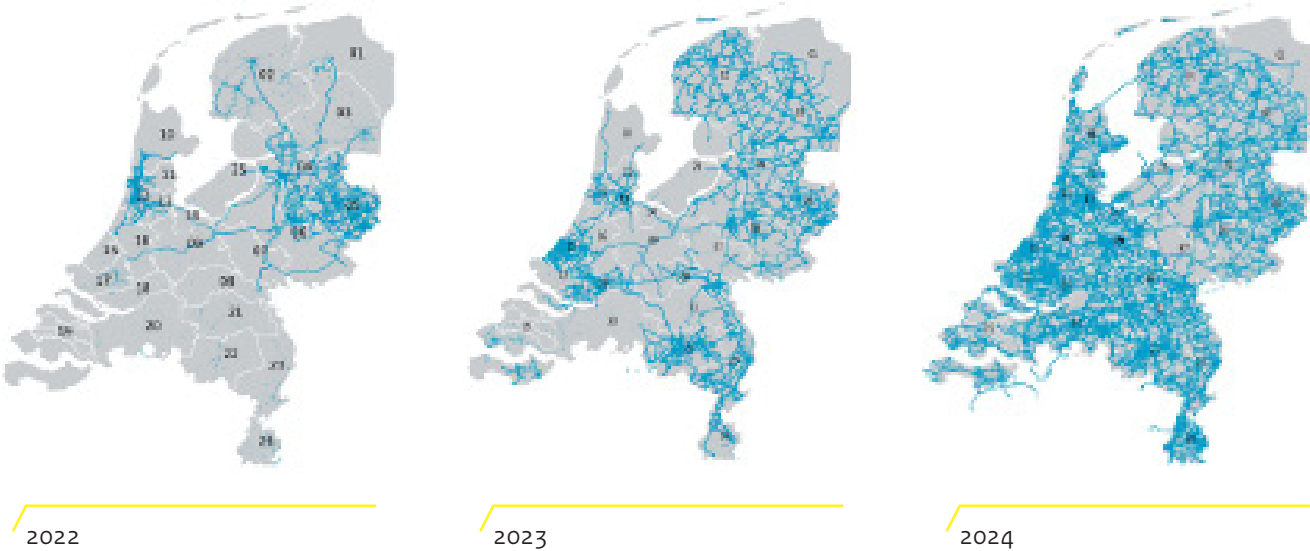These expansions have been realized on top of the expansions that had already been realised:
- ANWB implemented the EVA service in their Onderweg app in 2023.
- TomTom implemented the EVA service in their AmiGo app and TomTom Hazard Feeds for the automotive industry in 2023.
- ANWB implemented the transmission of information about road closures and maximum speeds (from the matrix signs) in their Onderweg app in 2023.

Coverage Emergency Vehicles Approaching (EVA) service
Throughout the SPS initiative, all safety regions (veiligheidsregio's) have been connected to the EVA service. As a result, warnings for approaching ambulances can now be issued nationwide across the Netherlands. The images below illustrate the coverage expansion over time, from left to right, for the years 2022, 2023, and 2024.


2022   2023   2024

Together, the SPS partners provide the following services:

	Anwb	Be-Mobile	Hyundai	Kia	TomTom	Inrix
Traffic Jam Ahead Warnings		√			√	
Emergency Vehicle Approaching	√	√	√	√	√	
Safety Related Traffic Information	√	√	√	√	√	√
Traffic Laws: lane closures (matrix signs above the road)	√	√				
Traffic Laws: applicable maximum speeds (during day and nighttime)	√	√	√	√	√	
Other Traffic Laws, such as environmental zones and school zones	√	√	√	√	√	

Increased use of the services
In 2023, the number of kilometers driven in the Netherlands with active SPS partner services increased by approximately 23%. In 2024, this growth continued with an additional increase of around 9% compared to 2023. Overall, this represents a total increase of 34% in vehicle kilometers driven with Safety Priority Services, enabling drivers to travel more informed and safely.

When compared to the total number of vehicle kilometers traveled annually on the Dutch road network, this corresponds to a coverage of more than 1 in 5 vehicle kilometers.

Use of services
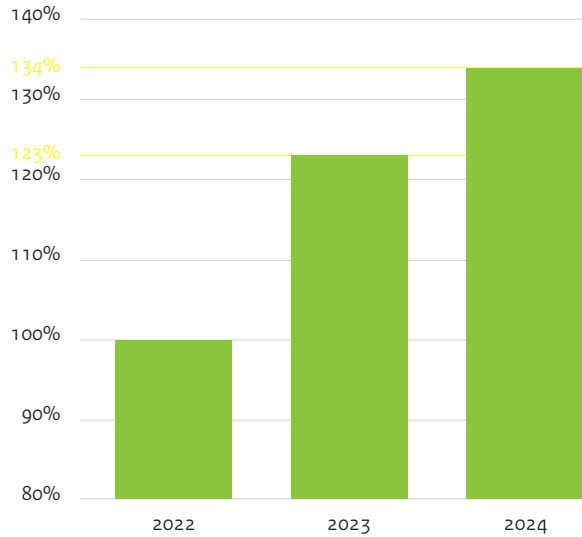
NDW backbone

Informing better and faster
The Safety Priority Services program has enabled road user reports (so-called crowd-sourced reports) to become available as an open data feed via the NDW (National Road Traffic Data Portal) backbone. These reports are now combined with data from road authorities, ensuring that notifications from various sources are verified and validated. This newly integrated SRTI (Safety-Related Traffic Information) feed enhances the ability to inform road users more quickly and accurately about potentially hazardous situations, such as breakdowns or accidents.

A data analysis comparing crowd-sourced reports with road authority data on breakdowns and accidents has been conducted. The findings show that in 90–95% of reported cases, crowd-sourced reports were available approximately 8–10 minutes earlier than those from road authorities. This allows road users to be warned sooner about dangerous situations. In about 5–10% of cases, the road authority report was the first to be recorded.

The NDW backbone analysis also indicates that incorporating crowd-sourced reports from various service providers increases the total number of safety notifications by a factor of three to four. However, it is important to note that approximately two-thirds of these additional reports originate from a single crowd-sourced source, and only about one-third of all reports are ultimately confirmed by multiple sources. As a result, a significant portion of the reports remains unverified and is therefore less reliable than notifications that have been validated by multiple sources. To address this, a confidence score is assigned to each notification, allowing service providers to display only those that meet a specified minimum confidence level.

Less distraction
Road users receive numerous warnings during their journeys, and these warnings provide significant value. Following a digital alert about an accident, 42% of drivers apply their brakes, while 52% report being more alert. However, some warnings are perceived as distracting.

In addition to the benefit of faster information, the open data feed from the NDW backbone also enables more targeted communication by prioritizing the most reliable reports. This can help reduce unnecessary distractions for drivers.

Public-private partnership continues

Safety Priority Services marked three years of intensive collaboration between public and private partners. This partnership led to a better understanding of each other's motivations and (im)possibilities. The strategic quarterly meetings held with each partner played a key role in this. Additionally, daily collaboration ran smoothly. This provides a strong foundation for the coming years, as we will continue our public-private partnership even after Safety Priority Services.

The public-private collaboration within Safety Priority Services has established a foundation that not only continues but also deepens and expands in line with the broader policy objectives of the Actieagenda Auto. Improving digital travel and route information, increasing road safety, and supporting the transition to smarter and more sustainable mobility remain key priorities. The use of real-time traffic data, such as the integration of matrix sign information into vehicle systems and warnings for approaching ambulances and school zones, illustrates how digitalization and traffic management come together. The signed letters of intent are therefore not merely a continuation of existing cooperation but an essential step in the transition where we, together with the industry, drive these applications forward.

Industry action plan
Over the past three years, this collaboration between government and private parties has led to a better understanding of each other's interests and possibilities, resulting in a strong foundation for innovative mobility services. This is now reflected in the letters of intent with Kia and Hyundai, with which the Netherlands not only uses mobility data for road safety but also plays a pioneering role in the implementation of smart vehicle functions. At the same time, efforts continue in the other direction—from vehicles to road authorities. For example, the initiative where the Ministry of Infrastructure and Road Authorities can proactively act based on vehicle data to improve the quality and safety of the road network.

In short, the Netherlands is building on the successes of Safety Priority Services by structurally anchoring collaboration with the industry within mobility policy. By linking technological innovations to national infrastructure objectives and road safety measures, mobility becomes smarter, more sustainable, and safer—exactly as the Actieagenda Auto envisions.

SRTI on incidents

Legend: Very good | Good | Neutral | Bad | Very bad

Horizontal stacked bar chart categories: Usability and User friendliness, Distraction of user, Usefulness, Experienced Safety, Visibility and understanding, Quality. X-axis: 0% to 100%.