

## Chronology of Defect Determination

- In December 2020, the Fremont Factory team detected an increased rate of failed camera calibrations on Model Y vehicles in production. Production camera calibrations are conducted as part of the vehicle assembly process. Swapped camera feeds inside the camera harness were determined to be the cause, and the vehicles were corrected in production.
- From December 2020 through early February 2021, as part of follow-up efforts to ensure that camera harnesses with correctly installed terminals were used in vehicle production, camera harness inventory was screened and additional controls and tests were implemented in the supplier's manufacturing of the harnesses.
- In February 2021, the Service Engineering team identified repairs on recently delivered vehicles that were unable to successfully complete field camera calibrations. Autopilot features, including AEB, are not available to engage unless a vehicle completes and passes field camera calibrations. An engineering investigation into the failed field camera calibrations determined the cause to be camera harnesses with swapped feeds. The engineering investigation was closed based on the corrective actions taken in prior months to screen harness inventory and implement additional controls in the supplier's manufacturing process, coupled with Tesla's risk assessment at the time that vehicles with the condition could not complete or pass field camera calibrations and engage Autopilot features, including AEB.
- After the engineering investigation was closed, Tesla continued to monitor the vehicle fleet, including related Service repairs. No new material information or events warranted reopening the engineering investigation until February 9, 2022, during an evaluation of new computer vision objects modeling with anonymized video clips, when some vehicles that had successfully completed field calibrations exhibited signs of swapped narrow and fisheye camera feeds, despite the previous assessment that vehicles with this condition could not complete field calibrations. Tesla reopened the engineering investigation to better understand the condition, root cause, and potential scope.
- From mid-February 2022 to mid-March 2022, Tesla designed, developed and validated an onboard diagnostic to detect the condition on a potentially affected vehicle fleet. If the condition was detected on a vehicle, an alert appeared on the user interface, and, as a precautionary measure while the investigation continued, Autopilot features, including AEB, were disabled until the condition was remedied in Service.
- Starting in mid-March 2022, Tesla began deploying the onboard diagnostic to the potentially affected vehicle fleet in waves. The deployment continued over several weeks.
- From April 11 through April 28, 2022, as part of the ongoing engineering investigation, Tesla initiated simulation testing to support a risk assessment and reviewed incoming data from the onboard diagnostic.

- On May 2, 2022, having completed the engineering investigation and risk assessment and confirmed the same root cause, a recall determination was made to remedy the vehicles identified by the onboard diagnostic with the condition.
- As of May 6, 2022, Tesla identified 4 warranty claims and 1 field report (received between April 2, 2022, and May 5, 2022) that have been received for U.S. vehicles and that are related to or may be related to vehicles with swapped camera feeds passing field calibrations. Tesla is not aware of any crashes, injuries, or deaths related to this condition.
- Between June 15 and June 16, 2022, Tesla identified one additional Model 3 vehicle that may be experiencing this condition based on its onboard diagnostic triggering an alert for this condition. After reviewing the vehicle data, Tesla concluded that the additional vehicle should be added to the recall campaign.