

ACPE

Share of Korea's Progress in ACPE GTR Activities

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Korea Research Update

Status of Two Planned Studies on ACPE GTR Activity

STUDY #1

Normal Pedal Operation Speed Range During Real Vehicle Driving

Goal:

We need to establish baseline data on normal pedal speed to clearly distinguish them from pedal errors.



Pre-R&D phase – data collection ongoing

STUDY #2

Pedal Misoperation Speed Analysis using 10 Hz EDR Data

Goal:

Quantify pedal-operation speed in actual misoperation crashes by analyzing high-resolution 10 Hz EDR records collected from real-world incidents.

▶ Analysis in progress – interim results today

Today's presentation covers the current status of both studies and the interim findings of Study #2.

Study #1 — Current Status

Normal Pedal Operation Speed Range During Real Vehicle Driving

Status: Pre-R&D phase — results not available within 2026

Current Activity

- **Data collection is ongoing.**
- Pedal operation data from real driving conditions is being gathered as raw input for the upcoming R&D project.
- **Korea is currently in the pre-R&D / preparation phase.**
- We plan to analyze data from elderly drivers. When the APS goes over 80%, it will trigger the system to collect pre- and post-event data every 100 milliseconds.

* Specific triggers and targets are still under discussion.

Why no presentation in 2026

- **Data processing required.**
- The collected raw data must first be cleaned, segmented, and converted into a comparable speed/travel format before any analysis can begin.
- **Insufficient time for analysis in 2026.**
- Given the data-processing workload and the volume of samples required to obtain a statistically meaningful range, completion and presentation of results within calendar year 2026 is not feasible.

Study #2 — Research Approach

Pedal Mis-operation Speed Analysis using 10 Hz EDR Data

Status: Analysis in progress — interim findings will be shared at this meeting

1 Collect 10 Hz EDR

Retrieve high-resolution EDR records from real-world pedal misoperation crashes investigated in Korea.

2 Reconstruct Pedal Curve

Extract APS (accelerator pedal stroke) signals at 10 Hz to reconstruct the full pedal-operation profile around the trigger point.

3 Quantify Operation Speed

Compute average pedal rate(%/s, 90% over) and peak pedal rate (%/s) for each case.

Why 10 Hz EDR data is essential

While the safety standard requires measuring a pedal speed of 400%/s, conventional 2Hz EDR data can only verify speeds up to 200%/s due to its 0.5-second interval. This significantly underestimates the actual pedal speed. Therefore, we need 10Hz EDR data to achieve sufficient time resolution and accurately measure these high-speed events.

Study #2 — Current Progress

Status of 10 Hz EDR data collection and analysis

10 Hz EDR records secured

9

cases

Currently under analysis

Where the data comes from

Under Korean regulations, vehicle manufacturers are mandated to submit investigation reports after examining a crash. The 9 records were selected from these official submissions—specifically from real-world pedal misapplication crashes where the manufacturer concluded there were "no vehicle defects"—provided that 10 Hz EDR data could be successfully retrieved. All cases are being processed using the same analysis procedure outlined in Study #2.

Analysis status

- Analysis is currently in progress for all 9 cases.
- An overview of the 9 cases — vehicle, powertrain, scenario and pedal rate — is presented on the following slide.

Note: Additional 10 Hz EDR records will continue to be added as new cases are confirmed. Updated results will be shared at every subsequent meeting of the ACPE Informal Working Group.

Study #2 — 9 EDR Cases Overview

Vehicle, powertrain and trigger scenario for each of the 9 secured 10 Hz EDR records

No	vehicle	Power-train	Obstacle	Steering	Auto hold status	Speed (kph)	APS TRAVEL	APS Rate (average)	UNR175 Prevent	why?	Front Dashcam
1	SUV	Hydrogen	vehicle	✓ (Left)	✓	4	99%(←25%)	185%/s	✗	under 400%/s	✓
2	SUV	hybrid	vehicle	✗	✓	3	100%(←26%)	185%/s	✗	under 400%/s	✗
3	Sendan	Electric	Unknown	✗	✗	8	76%(←20%)	112%/s	✗	at APS 76%, Crash occurred	✗
4	Sendan	Gasoline	No obstacle	✗	✓	13	90%(←21%)	76.67%/s	✗	under 400%/s	✓
5	Sendan	Disel	Vehicle positioned at an angle	✗	✓	12	100%(←0%)	1,000%/s	△	Vehicle positioned at an angle	✓
6	SUV	Electric	vehicle	✗	✓	4	99%(←31%)	97%/s	✗	under 400%/s	✓
7	SUV	Electric	No obstacle	✓ (Right)	✗	17	86%(←16%)	35%/s	✗	under 400%/s	✓
8	Sendan	Gasoline	vehicle	✗	✓	3	100%(←0%)	1,000%/s	✓		✓
9	Sendan	Gasoline	wall	✓ (Left)	✓	0	98%(←33%)	325%/s	✗	under 400%/s	✓



Summary & Next Steps

Study #1 — Postponed

Normal Pedal Operation Speed Range During Real Vehicle Driving

Currently in pre-R&D phase. Data collection is ongoing, but processing and analysis cannot be completed within 2026, so no result presentation is planned this year.

Study #2 — Ongoing

Pedal Misoperation Speed Analysis — 10 Hz EDR

The data for the 9 cases is available in the shared EDR files. If video footage for each case is required, it will be presented at the next in-person meeting.

Next Steps

- 1 Continue securing 10 Hz EDR data.** Additional cases will be added to the Study #2 dataset as they are confirmed in Korea.
- 2 Share updated results at every Working Group meeting.** Newly analyzed 10 Hz EDR cases will be reported as soon as analysis is finalized for each case.
- 3 Study #1.** We anticipate that the analysis results(Normal Pedal Operation Speed Range During Real Vehicle Driving) will be available for sharing in 2027

THANK YOU

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