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NCAP

NEW CAR ASSESSMENT PROGRAM
FOR SOUTHEAST ASIAN COUNTRIES

TECHNICAL BULLETIN

INTRODUCTION OF ASEAN NCAP CHILD PRESENCE DETECTION (CPD) ASSESSMENT – KIDS CPD-DS3

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Introduction of ASEAN NCAP Child Presence Detection (CPD) Assessment - kiDS CPD-DS3

1. Background

ASEAN NCAP continues to strengthen child occupant protection through the enhancement of the Child Presence Detection (CPD) assessment under the ASEAN NCAP 2026–2030 Protocol. The updated protocol introduces an assessment of direct-sensing CPD systems, placing greater emphasis on technologies that detect the presence of a child inside a vehicle using physiological signatures rather than indirect inputs.

To ensure a standardised, repeatable, and realistic evaluation of these systems, ASEAN NCAP introduces the kiDS Child Presence Detection Subject (CPD-DS3) as the reference surrogate for CPD assessment.

Child Presence Detection systems are designed to detect a child left inside a locked or stationary vehicle and activate appropriate warning or notification systems. Depending on the technology, direct sensing CPD systems utilize radar, ultrasonic, or infrared sensors to detect respiration, thermal signatures, or body movement associated with a child occupant.

In accordance with the ASEAN NCAP CPD Code of Practice, the assessment is conducted under the most challenging conditions, with the child soundly asleep. This scenario represents the lowest level of respiration and body movement, providing a robust evaluation of the CPD system's detection sensitivity and reliability.

2. Adoption of kiDS CPD-DS3 as the Standardized Assessment Tool

In alignment with the ASEAN NCAP Child Presence Detection (CPD) Assessment, the kiDS CPD-DS3 has been officially adopted as the reference surrogate device for ASEAN NCAP's CPD assessment activities beginning with the 2026–2030 assessment protocol.

ASEAN NCAP adopts the kiDS CPD-DS3 as a **standardized testing surrogate** to ensure **consistency, transparency, and comparability** across all CPD system evaluations. The device simulates a realistic infant up to 12 months old, capable of reproducing natural respiration, thermal emission, and minimal body movements. Its role is to serve as a controlled, validated reference tool for objectively assessing the detection capability of CPD technologies implemented by vehicle manufacturers.

3. Key characteristics of the kiDS CPD-DS3 include:

Parameter	Specification
Height	75.0 cm $\pm$ 2
Weight	9.4 kg $\pm$ 1
Head Circumference	46.0 cm $\pm$ 1
Programmable Simulation Parameters	• Temperature: 35° – 37°C • Respiration rate: 18 – 50 breaths per minute (bpm) • Respiration amplitude: 3 mm / 6.5 mm / 10 mm • Head and limb motion range: 90° – 180°
Material	The CPD-DS3 outer shell features a three-layer composite material engineered for durability, electromagnetic realism, and thermal stability: • Protective Outer Layer: Flexible PU/TPU-coated nylon • Conductive Layer: Carbon-doped copper-nylon • Shielding Layer: Polyester copper/aluminum-blended fabric
Performance Characteristics	• Radar Frequency Range: 8 – 80 GHz • Reflection Coefficient: -2.8 ± 0.5 dB @ UWB (8–10 GHz); -4.22 ± 1 dB @ 60 GHz



Picture 1: The kiDS CPD-DS3

4. Manufacturer

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5. Conclusion

The inclusion of CPD assessment within the ASEAN NCAP 2026–2030 framework represents a significant step forward in advancing child safety technologies in vehicles. By standardizing the assessment process and introducing the kiDS CPD-DS3 as the reference surrogate, ASEAN NCAP reaffirms its dedication to protecting children and promoting innovation that prevents in-vehicle fatalities caused by unattended children.