



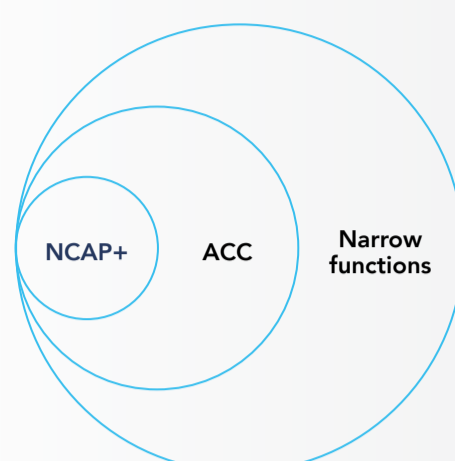
Cartex 4M is based on a Renesas V3M architecture with at least a 100° FOV  
It is composed of three kernels: NCAP+, ACC and Narrow functions



The three kernels utilize most of the Renesas V3M resources with the following distribution:

NCAP+ kernel 35%, ACC 25%, and the remaining 40% can be utilized by Cartica's narrow function.

The NCAP kernel requirements are set to allow full score in NCAP VRU, C2C, and SA test cases which is needed for the overall 5 stars rating.



## NCAP

### OBJECTS DETECTION

	Detection	Maximal distance (day)	Maximal distance (night)	Classification
Vehicle	3D (width, height and length)	150m – car, truck 80m - motorcycle	150m – car, truck 80m - motorcycle	Car, truck/ bus, motorcycle
Pedestrian	2D (width, and height)	40m	40m	Pedestrian, cyclist

- Object detection, tracking, and measurements are used for AEB and ACC applications only
- At host vehicle speed of 0-130 km/h
- Only fully visible pedestrians (~90%) will be detected (no detection of occluded pedestrians)
- Only fully visible vehicles (~90%) will be detected

### LANE DETECTION

- Lane detection, tracking and measurements are used for LDW and LKA applications only
- The algorithm will detect continuous ego lane marks, and road edges when the camera field of view allows for it (at least a 50m detection range)
- Lane marks, and road edges will be detected when their curvature radius is larger than 50m
- Detected lane marks will be classified in the following categories: solid, and dashed
- Detected road edge will be classified as road edge

### TRAFFIC SIGNS DETECTION

- Detection, tracking, and classification of speed limit traffic signs
- Detection of traffic signs is limited to signs relevant to the ego, and adjacent lanes
- Detection range for traffic signs range is based on common Industry TSR application requirements
- Traffic signs classification is limited to round signs

## NCAP+

Based on the NCAP kernel. Additional one of a kind capabilities are supported. Capabilities which are not traditionally covered by NCAP testing, but should be.



Child crossing a vehicle path at night A



Adult turn across path at night



Cyclist crossing a vehicle path at night

### NARROW FUNCTIONS

These functions (all are patent pending) will provide added value to the basic NCAP functionality. The OEM will need to define a certain set as full deployment of all together is not feasible on V3M

Open door AEB/Steer Assist – Detection of opening parked vehicle door including distance and length estimation when fully open

Scooter alert - Alert based on scooter trajectory, and TTC (inclusive of sidewalks)

Parking assist – Alert and indication of available parking spots based on SR, OD, road edge classification (i.e. Blue and White), and navigation data

Child FCW - Forward collision warning for children - Higher TTC based on child classification

Speed bump ahead - Dedicated function for speed bump alerts

## COMPARISON TO THE COMPETITION

ADAS application	Cartex4M	Mobileye EyeQ4 base
FCW	✓	✓
AEB	✓	✓
SA	✓	✓
LDW	✓	✓
LKA	✓	✓
ACC	✓	✓
HLB	Not supported as it is not required for NCAP functionality	✓
ADB		✓
Open door AEB	✓	
Open door steer assist	✓	
Parking assist	✓	
Scooter alert	✓	
FCW child	✓	
Speed bump ahead	✓	