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CONFERENCE ON ASIA ROAD SAFETY 2024
" Safer Journey, Sustainable Future "
2-4 SEPTEMBER 2024 | PUTRAJAYA INTERNATIONAL CONVENTION CENTRE (PICC), PUTRAJAYA

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INSTITUT AUTOMOTIF ROBOTIK DAN IoT MALAYSIA
MALAYSIA AUTOMOTIVE ROBOTICS AND IoT INSTITUTE

Next Generation Vehicle (NxGV) Development in Malaysia

Ts. Mohd Sharulnizam bin Sarip

POWERED BY

MIROS Malaysian Institute of Road Safety Research
ASEAN ROAD SAFETY CENTRE
PERKESO
PLUS A member of UEM

Supported by:
RSF UN ROAD SAFETY FUND
VISION ZERO Safety.Health.Wellbeing.

NxGV Development in Malaysia: MARii Testing Facilities

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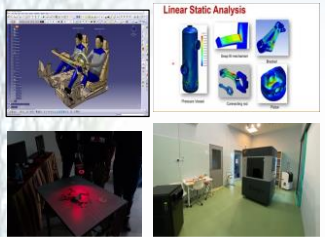


MARii Additive Technology Centre (MAMTEC)

MARii Main Office
Block 2280, Jalan Usahawan 2,
Cyber 6, 63000 Cyberjaya

MARii Simulation & Analysis Centre (MARSAC)

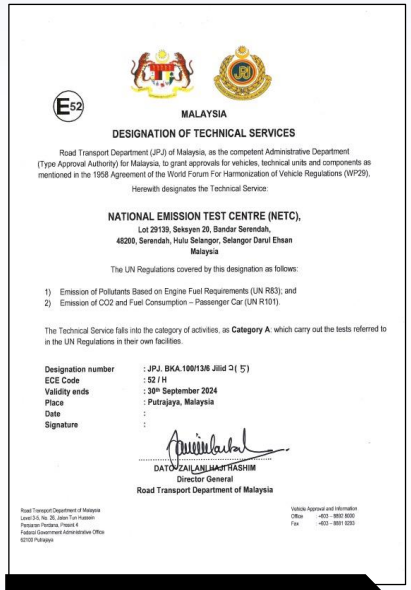
MARii Academy of Technology
Jalan Jasmine, Bandar Bukit Beruntung,
Selangor (Relocation)

MSIA TS E52/H

National Emission Testing Centre (NETC),
Mukim Serendah,
48000, Rawang, Selangor

MARii Design Centre (MDC)
Jalan Jasmine, Bandar Bukit Beruntung,
48300, Selangor (Relocation)

ISO/IEC 17025:2017



TECHNICAL SERVICE E52

ILB FOR AUTOMOTIVE

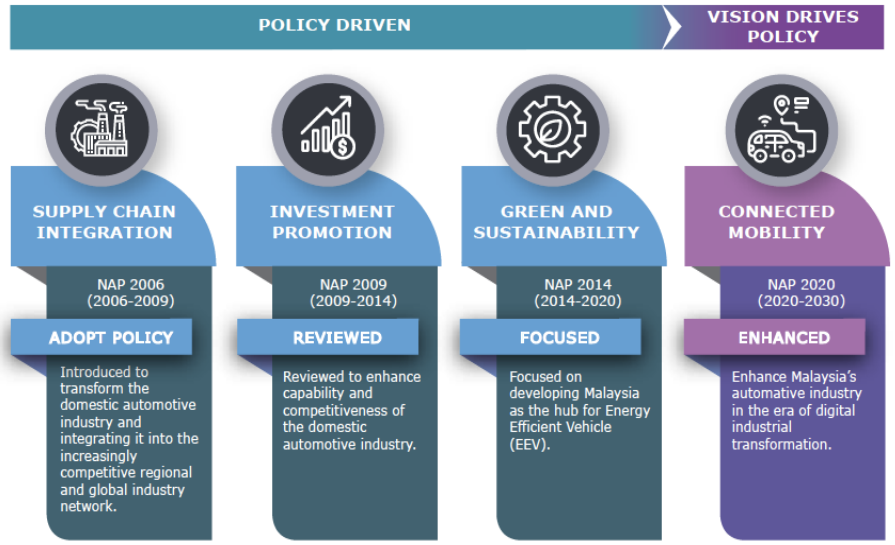
RECOGNIZED BY UNITED NATIONS E52/H

NOSS FOR EV

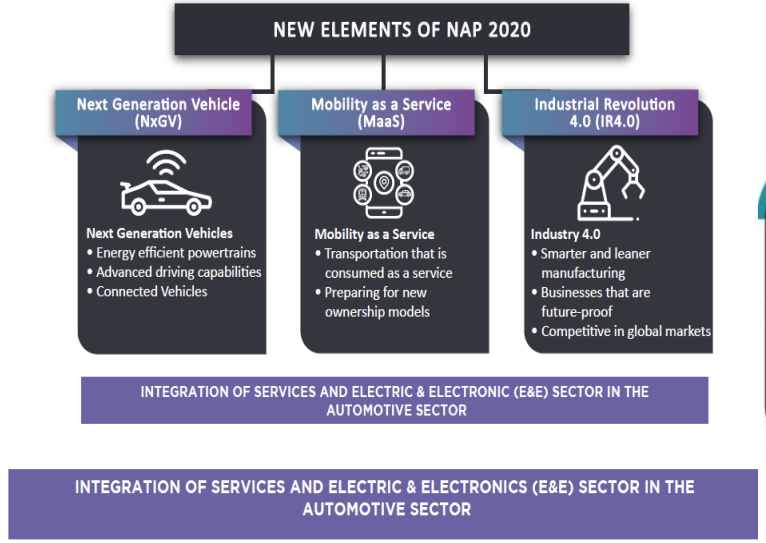
COMPLETE FACILITIES FOR EMISSION
/ ENERGY CONSUMPTION
UNR 83, UN R101, GTR 15, MS2722

NATIONAL AUTOMOTIVE POLICY 2020 (NAP2020) – LAUNCHED ON 21 FEB 2020

1 NAP 2020 is the 4th edition of NAP and enhanced the previous framework

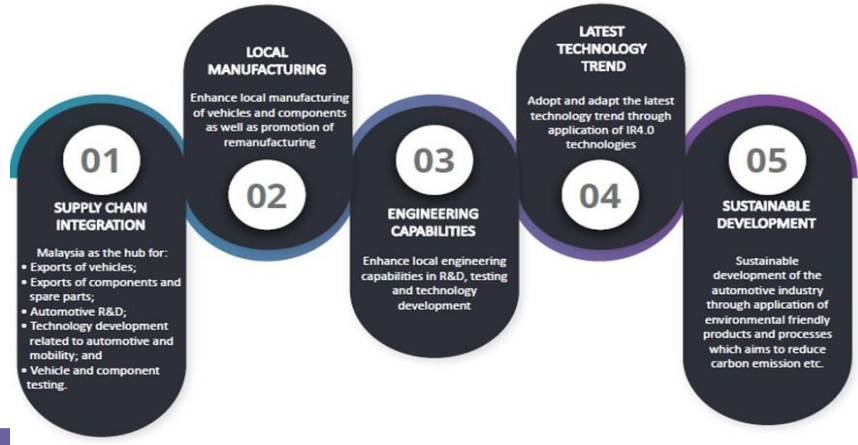


2 The new elements aims to integrate with various industries esp E&E and Services

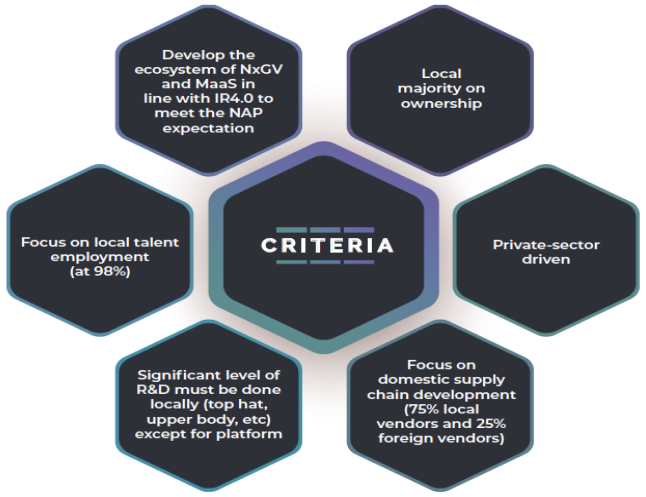


INTEGRATION OF SERVICES AND ELECTRIC & ELECTRONICS (E&E) SECTOR IN THE AUTOMOTIVE SECTOR

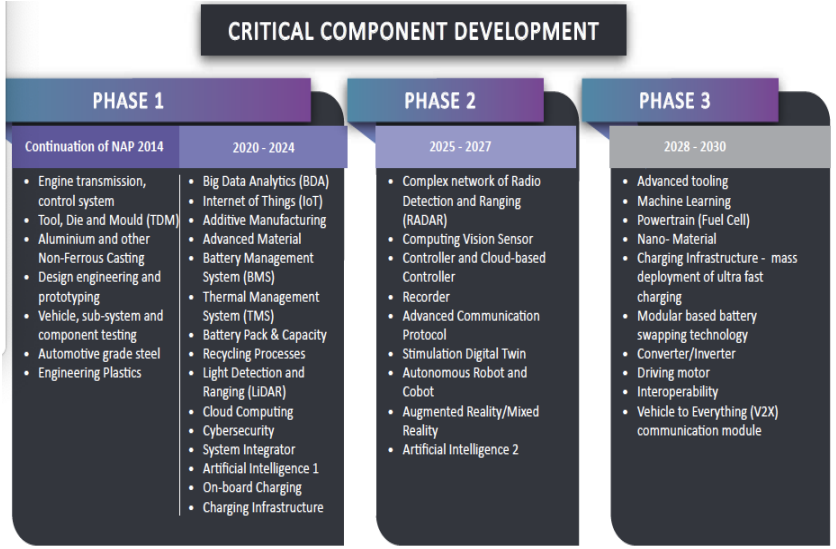
3 National Automotive Vision aims to strengthen 5 main pillars for development



4 National Projects are responsible to spur the local development

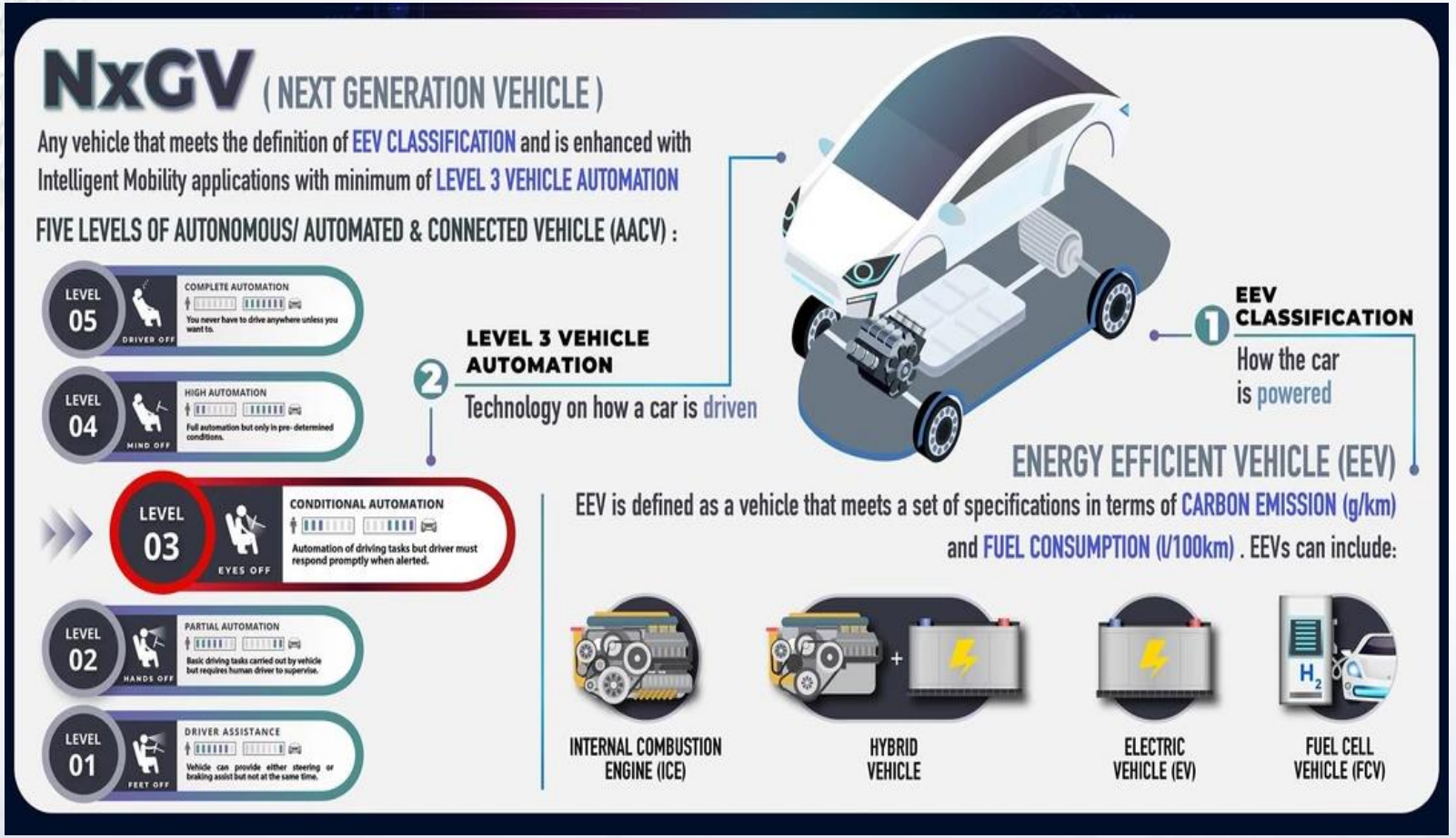


5 The aims include to increase value chain, talent and technology development



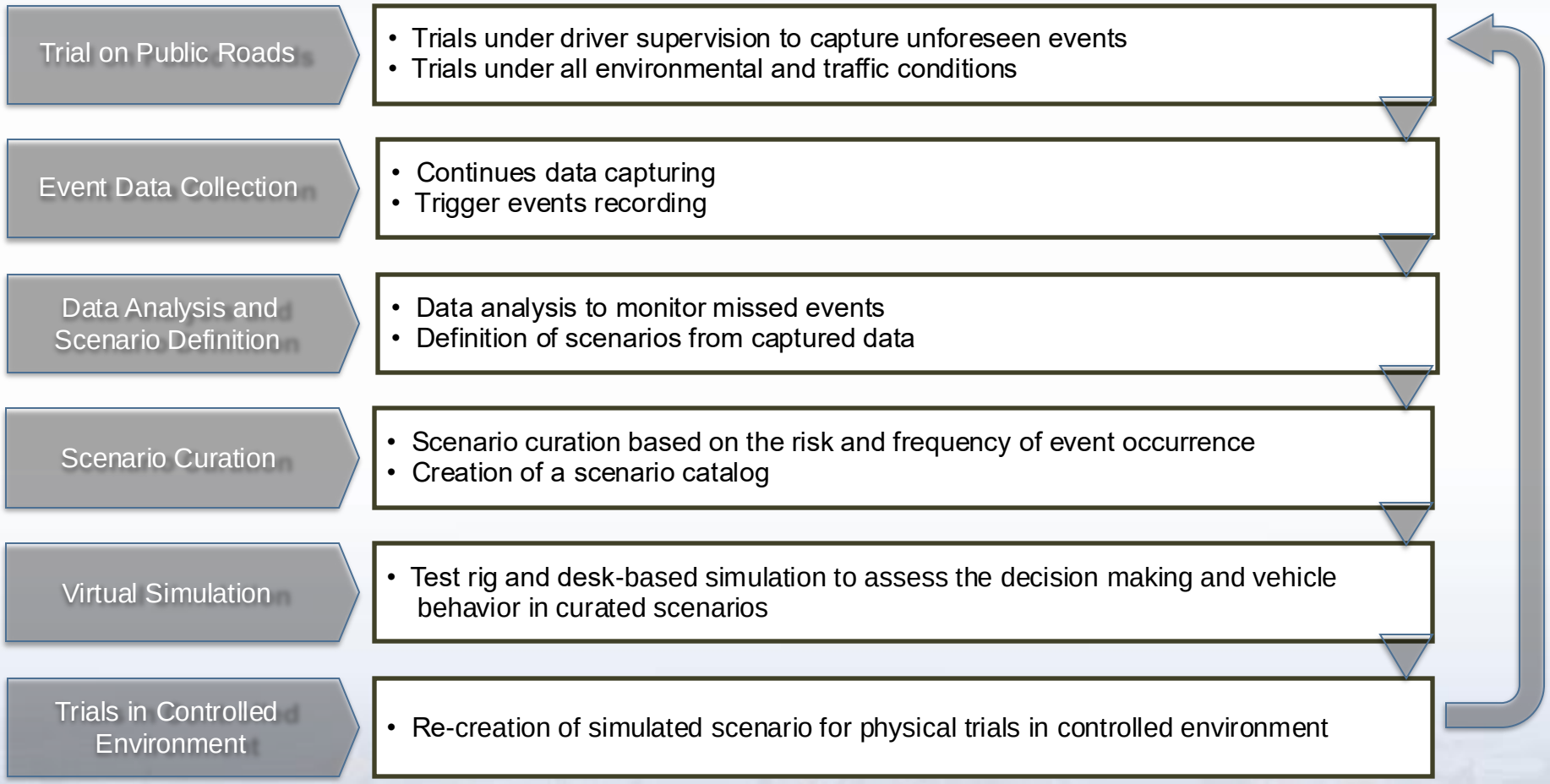
6 The development of NxGV will complement the national economic growth

NAP 2020 on EEV and NxGV



- NAP 2020 prioritizes future preparations for the local automotive industry by encouraging the production of energy efficient vehicles (EEVs) including Next Generation Vehicles (NxGV) that have digital features and smart technology.

NxGV Testing and Validation



NxGV Improve Road Safety

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SELF-DRIVING VEHICLES

Self-driving vehicles will have the ability to navigate independently.

DO NOT REQUIRE ANY DRIVER INPUT

HAVE A 360º VIEW AT ALL TIMES

Reduce the element of human error in driving, which is the cause in 90% of all accidents today.

However, self-driving vehicles are unlikely to be widely available before 2030.

AUTOMATED VEHICLES

Today, partially automated vehicles are able to perform an increasing number of driving tasks in specific scenarios.

AUTOMATIC PARKING

HIGHWAY PILOT

Advanced driver assistance systems (ADAS) take over safety-critical functions in dangerous situations.

STEERING

BRAKING

CONNECTED VEHICLES

Exchanging safety-critical information between vehicles and infrastructure makes it possible to drive down the number of accidents and casualties.

Using this information it is possible to:

IMPOSE VARIABLE SPEED LIMITS

OPEN OR CLOSE TRAFFIC LANES

HELP AVERT ACCIDENTS

FLAG HAZARDS ON THE ROAD AHEAD

NxGV Key Technology Development: IoT

Telematics Solutions:

Embedded

A telematics box that is functionally hardwired into a vehicle and helps provide access through connectivity. The interface offers access to a wide range of vehicle management features and allows the integration of multiple features.

Independent Smartphone

A solution for internet and GPS-enabled that incorporated with additional value chains such as content providers, application providers for distracted driving, and wireless providers.

Portable

A detachable device that maintain contact with the vehicle, including low-cost solutions and detachable devices that collect information and synchronize the same with other devices (typically, a tablet or a phone) through Bluetooth or Wi-Fi.

NxGV Key Technology Development: Software

HD Map

Use of high-definition maps, which underpin almost every other part of the software stack.

Localization

The vehicle localizes itself with single-digit-centimeter-level accuracy.

Perception

Identify different perception tasks such as classification, detection, and segmentation and learning convolutional neural networks which are critical to perception.

Prediction

Predict different ways how other vehicles or pedestrians might move in self-driving cars.

Planning

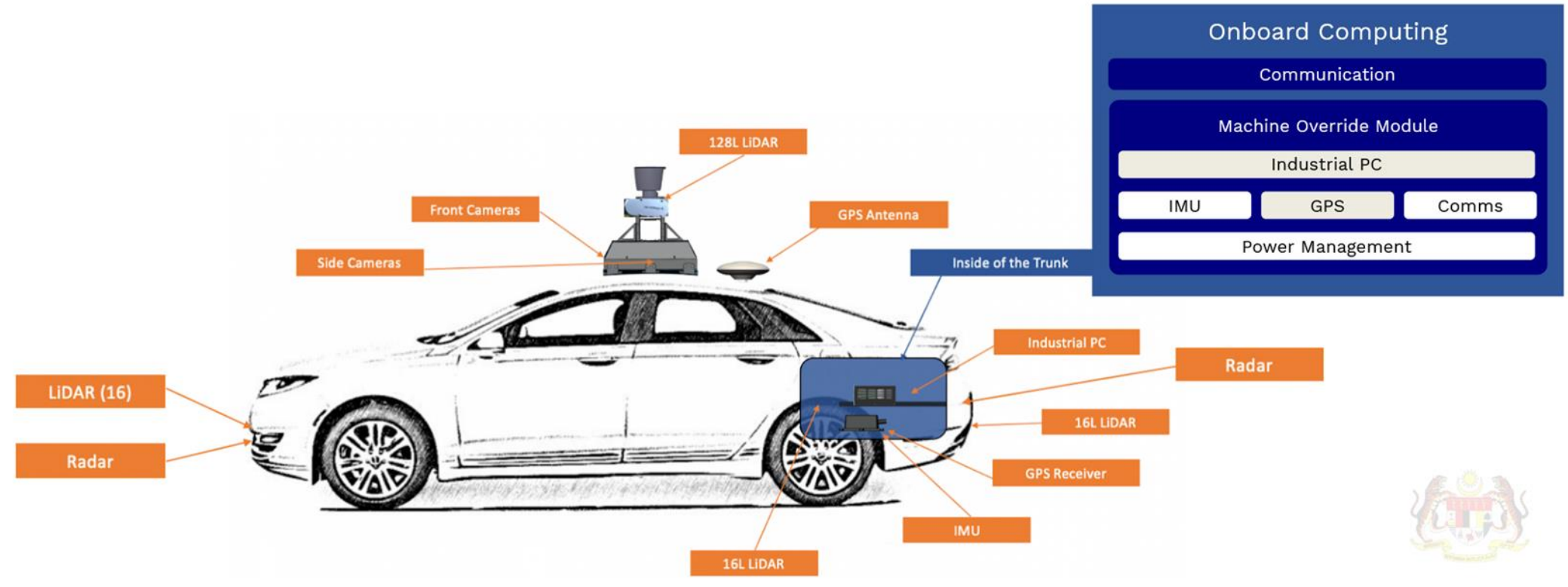
Identify several different approaches used to develop trajectories for autonomous vehicles.

Control

Understand how to use steering, throttle, and brake to execute our planned trajectory and master different types of controllers.

NxGV Key Technology Development: Vehicle Integration

Sensing Unit	Auxiliary Units	Communication Units	Command Units	Mechanical Units	Computing Unit



NxGV Development in Malaysia: R&D on Hardware, Software and Testing

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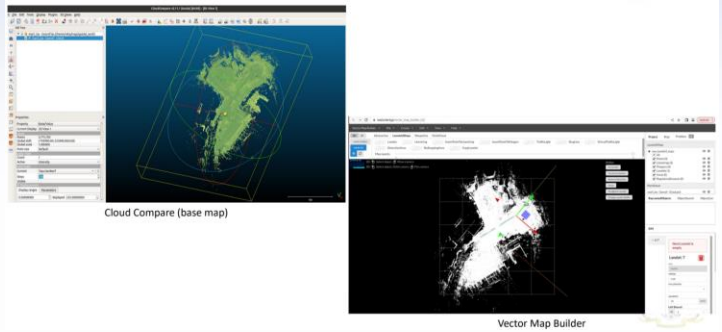
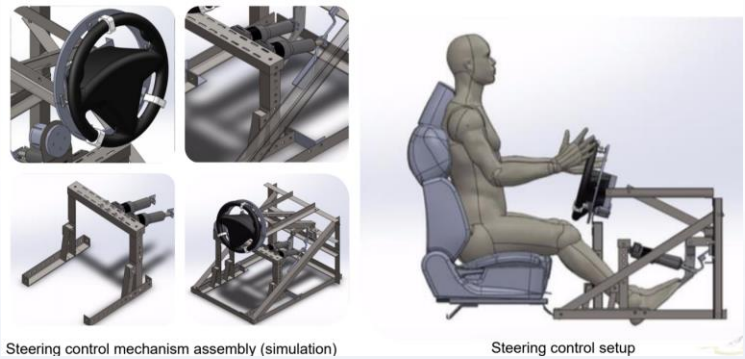
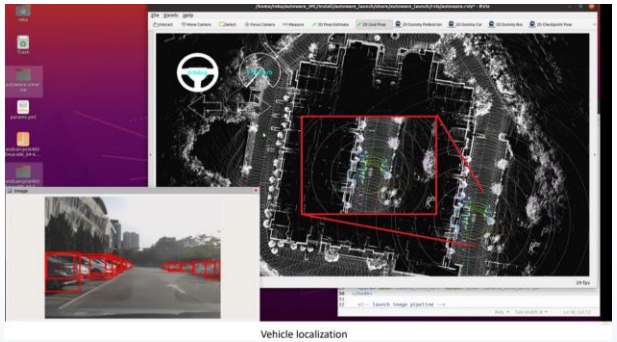
Hardware and System Setup



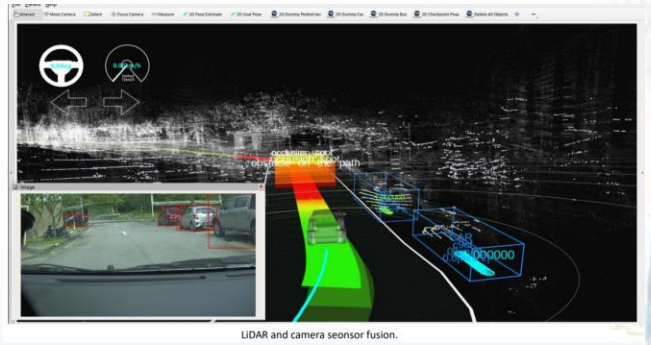
Software Development (Mapping)



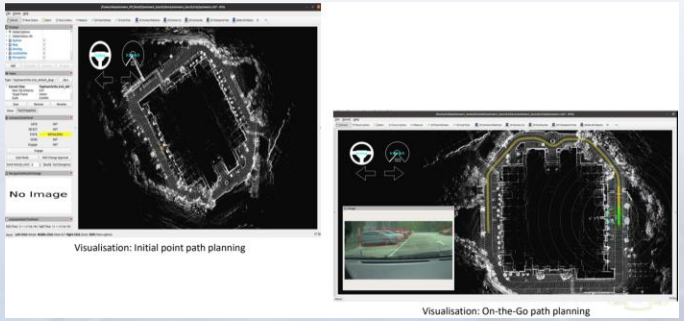
Steering Control Development



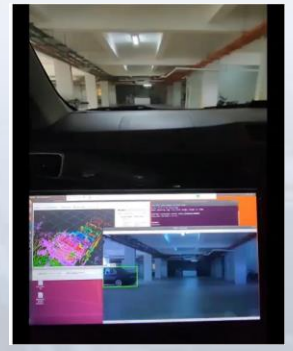
Software Development (Vehicle Localisation)



Software Development (Sensor Fusion)



Software Development (Path Planning)



Testing & Data Collection

Developed by:

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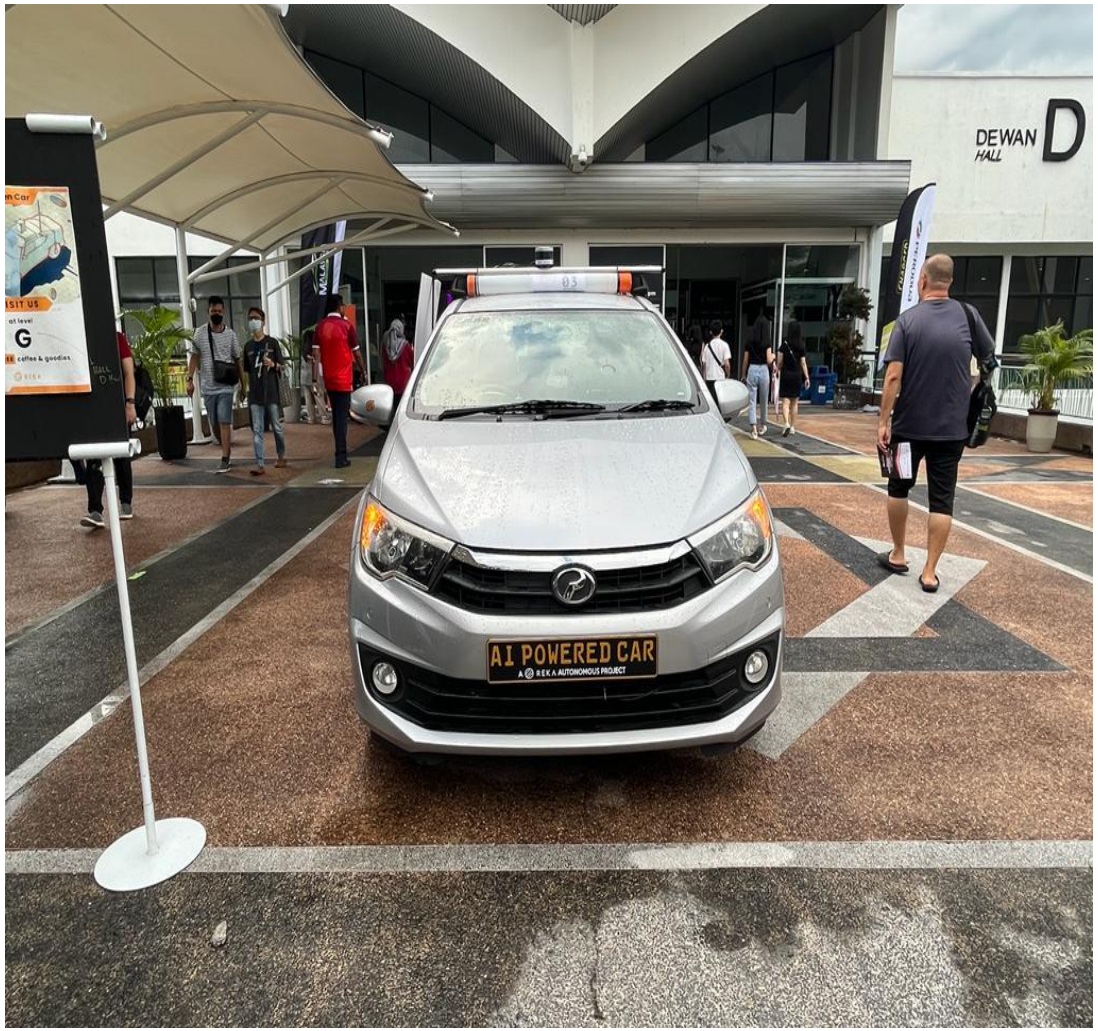
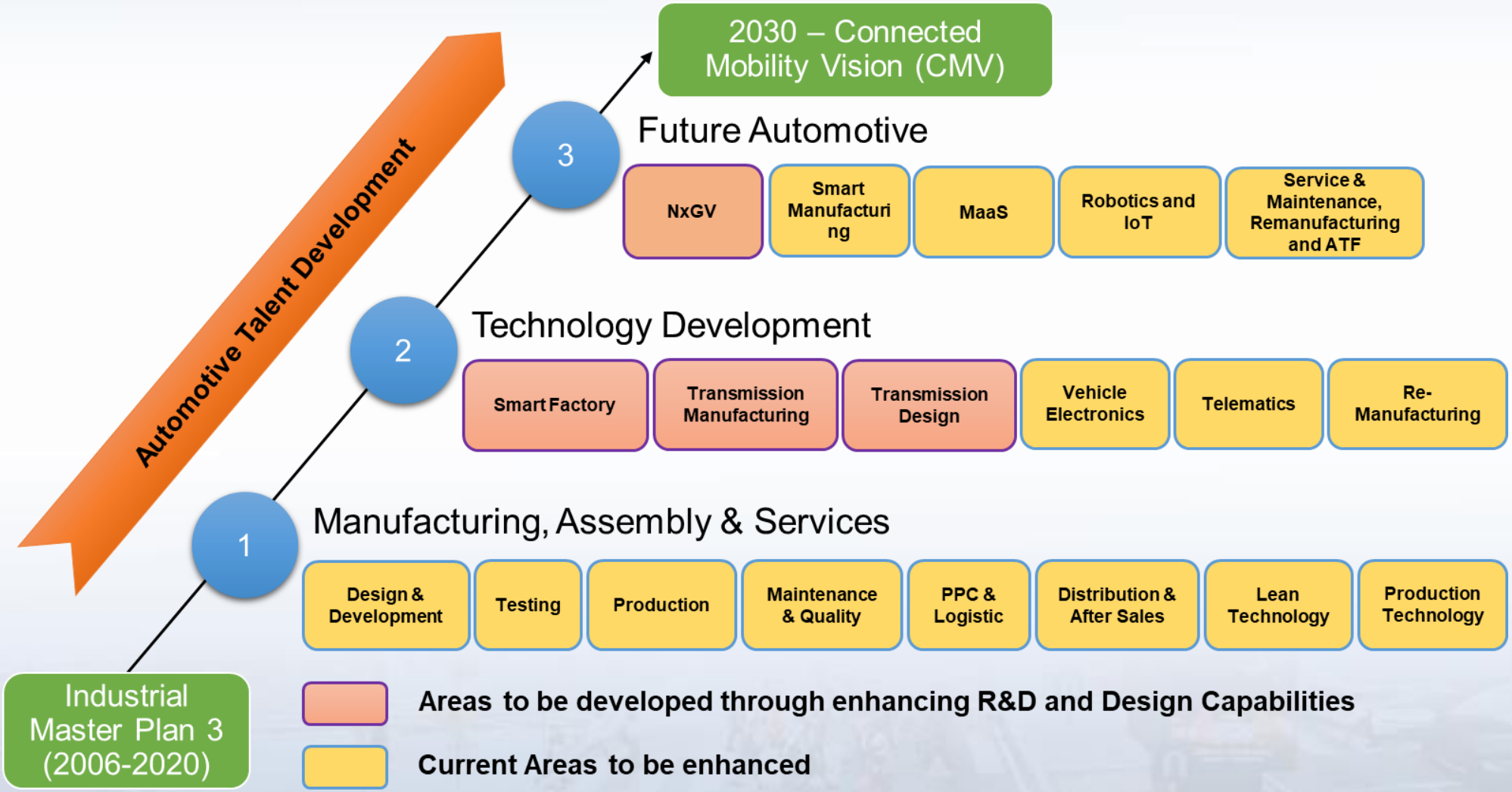
NxGV Development in Malaysia: AV Level 3 Perodua Bezza



NxGV Development in Malaysia: Talent Development



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Thank you

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