



## ASEAN NEW CAR ASSESSMENT PROGRAM

### CRASHWORTHINESS RATING PROGRAMS AROUND THE WORLD: A COMPILATION & INTRODUCTION TO ASEAN NCAP



Version 1.0 MARCH 2012



GLOBAL NCAP  
[www.globalncap.org](http://www.globalncap.org)



FIA Foundation  
for the Automobile and Society

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## ACRONYMS & TERMINOLOGIES

<b>AA Singapore</b>	Automobile Association of Singapore
<b>AAM</b>	Automobile Association of Malaysia
<b>AAP</b>	Automobile Association Philippines
<b>ANCAP</b>	Australasian New Car Assessment Program
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASEAN NCAP</b>	ASEAN New Car Assessment Program
<b>C-NCAP</b>	China New Car Assessment Program
<b>CRS</b>	Child Restraint System
<b>ESC</b>	Electronic Stability Control
<b>Euro NCAP</b>	European New Car Assessment Program
<b>FIA</b>	Fédération Internationale de l'Automobile <i>(International Automobile Federation)</i>
<b>GNCAP</b>	Global New Car Assessment Program
<b>IIHS</b>	Insurance Institute for Highway Safety
<b>JNCAP</b>	Japan New Car Assessment Program
<b>KNCAP</b>	Korean New Car Assessment Program
<b>Latin NCAP</b>	Latin American & Caribbean New Car Assessment Program
<b>MDB</b>	Mobile Deformable Barrier
<b>MIROS</b>	Malaysian Institute of Road Safety Research
<b>MOU</b>	Memorandum of Understanding
<b>NCAP</b>	New Car Assessment Program
<b>NHTSA</b>	National Highway Traffic Safety Administration
<b>ODB</b>	Offset Deformable Barrier
<b>SAT</b>	Safety Assist Technology
<b>SBR</b>	Seat Belt Reminder

## 1. INTRODUCTION

The purpose of crashworthiness rating program is to give consumers the information on the safety level of cars in a systematic and understandable manner<sup>1</sup>. In other words, consumers will be guided in terms of safety performance whenever they want to acquire cars in the market i.e. how the tested cars would provide protection to the occupants in the event of road crashes. This, however, limited to certain type of crash configurations due to the nature of road crashes that could happen in many possible ways.

For example, the most common test in this consumer-based program is the frontal crash test, either in full frontal (full wrap frontal test against a barrier) or offset frontal test (frontal test against a deformable barrier<sup>2</sup> to simulate an impact with another car). Over the years, new tests and assessments had been introduced such as side impact test, pedestrian protection, child protection (Child Restraint System or CRS), active safety (assistance systems) and fuel consumption (and many more). Consequently, this evolution has made the programs not only focusing on crashworthiness aspect alone but also to include other spectrums of consumers' interests about cars.

On the other hand, this consumer-based program has also benefited car manufacturers since the results are used in their advertisements as one of the selling points. Even though the requirements of each test or assessment become stricter, the manufacturers are keen to build cars that met the highest level in the rating system to either sustaining their reputation or gaining good impression by consumers. This will again benefit the consumers in the countries or regions where the programs are implemented, since the programs have increased the population of high quality vehicles on the road.

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<sup>1</sup> Murray Mackay (Undated) *Crashworthiness rating* (Presentation Slides)






<sup>2</sup> Offset deformable barrier (ODB)

## 2. CRASHWORTHINESS RATING PROGRAMS AROUND THE WORLD

Until recently, crashworthiness rating programs which are mostly known by the name of “New Car Assessment Program” or NCAP exist in all inhabited continents around the world.

The following table (**Table 1**) describes the established NCAPs around the world.

**Table 1** – NCAPs around the world by continent

Continent	Program Name	Label	Countries
ASIA	<b>China New Car Assessment Program</b> Acronym: <b>C-NCAP</b>		<ul style="list-style-type: none"> <li>China</li> </ul>
	<b>Japan New Car Assessment Program</b> Acronym: <b>JNCAP</b> Established <b>1991</b>		<ul style="list-style-type: none"> <li>Japan</li> </ul>
	<b>Korean New Car Assessment Program</b> Acronym: <b>KNCAP</b> Established <b>1999</b>		<ul style="list-style-type: none"> <li>Korea</li> </ul>
AUSTRALIA	<b>Australasian New Car Assessment Program</b> Acronym: <b>ANCAP</b> Established <b>1992</b>		<ul style="list-style-type: none"> <li>Australia</li> <li>New Zealand</li> </ul>
EUROPE	<b>European New Car Assessment Program</b> Acronym: <b>Euro NCAP</b> Established <b>1997</b>		<ul style="list-style-type: none"> <li>France</li> <li>Germany</li> <li>Italy</li> <li>Spain (Catalonia)</li> <li>Sweden</li> <li>The Netherlands</li> <li>UK</li> <li>European region as a whole</li> </ul>

<b>NORTH AMERICA</b>	<b>Insurance Institute for Highway Safety – Vehicle Ratings</b> <i>Acronym: US IIHS</i>		• USA
	<b>New Car Assessment Program (NHTSA<sup>3</sup>)</b> <i>Acronym: US NCAP</i> <i>Established 1978</i>		• USA
<b>SOUTH AMERICA</b>	<b>Latin American &amp; Caribbean New Car Assessment Program</b> <i>Acronym: Latin NCAP</i>		• Latin America and Caribbean region as a whole









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<sup>3</sup> National Highway Traffic Safety Administration

### 3. WEBSITES

More information is available from the respective NCAPs' official websites ([Table 2](#)):

**Table 2** – NCAPs official websites

Program Name	Label	Official Website
China New Car Assessment Program C-NCAP		<a href="http://www.c-ncap.org">http://www.c-ncap.org</a> (Chinese) <a href="http://www.c-ncap.org.cn/c-ncap_en/index.htm">http://www.c-ncap.org.cn/c-ncap_en/index.htm</a> (English)
Japan New Car Assessment Program JNCAP		<a href="http://www.nasva.go.jp">http://www.nasva.go.jp</a>
Korean New Car Assessment Program KNCAP		<a href="http://www.car.go.kr">http://www.car.go.kr</a> (Korean)
Australasian New Car Assessment Program ANCAP		<a href="http://www.ancap.com.au">http://www.ancap.com.au</a>
European New Car Assessment Program Euro NCAP		<a href="http://www.euroncap.com/home.aspx">http://www.euroncap.com/home.aspx</a>
Insurance Institute for Highway Safety – Vehicle Ratings US IIHS		<a href="http://www.iihs.org/">http://www.iihs.org/</a> (Organization) <a href="http://www.iihs.org/ratings/default.aspx">http://www.iihs.org/ratings/default.aspx</a> (Vehicle Rating)
New Car Assessment Program (NHTSA) US NCAP		<a href="http://www.nhtsa.gov/">http://www.nhtsa.gov/</a> (Organization) <a href="http://www.safercar.gov/">http://www.safercar.gov/</a> (NCAP)
Latin American & Caribbean New Car Assessment Program Latin NCAP		<a href="http://latinncap.com/en/">http://latinncap.com/en/</a>

#### 4. ASSESSMENT SCOPE

Each NCAP program derives the results through their unique methodology in the rating system. However, there are a lot of similarities in the test setup (**Table 3**) and technical/equipment used by virtue of adoption and harmonization process among all NCAPs.

**Table 3** – NCAPs assessment scope <sup>4 & 5</sup>

NCAP	Assessment Scope
C-NCAP	<b>Full Vehicle Crash Tests:</b> <ol style="list-style-type: none"> <li>1. Full frontal test</li> <li>2. Offset frontal test (ODB)</li> <li>3. Side impact test (MDB)</li> </ol> <b>Other Tests/Assessments:</b> <ol style="list-style-type: none"> <li>1. Fuel Consumption</li> </ol>
	<b>SINGLE STAR RATING (1-5+)</b>
JNCAP	<b>Full Vehicle Crash Tests:</b> <ol style="list-style-type: none"> <li>1. Full frontal test</li> <li>2. Offset frontal test (ODB)</li> <li>3. Side impact test (MDB)</li> </ol> <b>Other Tests/Assessments:</b> <ol style="list-style-type: none"> <li>1. Pedestrian protection</li> <li>2. Whiplash test</li> <li>3. CRS – Dynamic test &amp; ease of use rating</li> <li>4. Brake test</li> </ol> <b>Others:</b> <ol style="list-style-type: none"> <li>1. Annual Grand Prix Award for best performing vehicle</li> </ol>
	<b>SINGLE STAR RATING (1-6) FOR OCCUPANT PROTECTION ONLY</b>

<sup>4</sup> CARHS (2011) Safety Companion (Safety Wissen – [www.carhs.de](http://www.carhs.de))

<sup>5</sup> GNCAP (2011) NCAP - Vehicle safety is global ([http://www.globalncap.org/Documents/esv\\_brochure.pdf](http://www.globalncap.org/Documents/esv_brochure.pdf))



<b>KNCAP</b>	<p><b>Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Full frontal test</li> <li>2. Offset frontal test (ODB)</li> <li>3. Side impact test (MDB)</li> <li>4. Side impact test (Pole)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Pedestrian protection</li> <li>2. Whiplash test</li> <li>3. Rollover resistance</li> <li>4. Brake evaluations</li> </ol>
	<b>SINGLE STAR RATING (1-5) ON ALL RESULTS EXCEPT BRAKES</b>
<b>ANCAP</b>	<p><b>Full Vehicle Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Offset frontal test (ODB)</li> <li>2. Side impact test (MDB)</li> <li>3. Side impact test (Pole)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Pedestrian protection</li> <li>2. Safety Assist Technology (SAT)</li> <li>3. Child protection</li> </ol>
	<b>SINGLE STAR RATING (1-5) ON ALL RESULTS</b>
<b>Euro NCAP</b>	<p><b>Full Vehicle Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Offset frontal test (ODB)</li> <li>2. Side impact test (MDB)</li> <li>3. Side impact test (Pole)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Pedestrian protection</li> <li>2. Whiplash test – static &amp; dynamic</li> <li>3. Child protection</li> <li>4. Assistance systems</li> </ol> <p><b>Others:</b></p> <ol style="list-style-type: none"> <li>1. Beyond NCAP awards for innovative driver assistance technology</li> </ol>
	<b>SINGLE STAR RATING (1-5) ON ALL RESULTS</b>

<b>US IIHS</b>	<p><b>Full Vehicle Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Offset frontal test (ODB)</li> <li>2. Side impact test (MDB)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Whiplash test – static &amp; dynamic</li> <li>2. Roof crush</li> <li>3. Booster belt fit assessments</li> <li>4. ESC</li> <li>5. Low-speed damageability testing</li> </ol> <p><b>Others:</b></p> <ol style="list-style-type: none"> <li>1. <i>TOP SAFETY PICK</i> awarded to models that are rated good in all evaluations and offer ESC</li> </ol>
	<p><b>VEHICLE RATING SCALE (Good; Acceptable; Marginal; Poor)</b>  <b>BOOSTER BELT FIT (BEST BETS, GOOD BETS, Not recommended)</b></p>
<b>US NCAP</b>	<p><b>Full Vehicle Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Full frontal test</li> <li>2. Side impact test (MDB – angular)</li> <li>3. Side impact test (Pole – angular)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Rollover resistance</li> </ol> <p><b>Others:</b></p> <ol style="list-style-type: none"> <li>1. Recommends ESC, forward-collision warning, and lane-departure warning (US NCAP criteria)</li> </ol>
	<p><b>SINGLE STAR RATING (1-5) ON ALL RESULTS</b></p>
<b>Latin NCAP</b>	<p><b>Full Vehicle Crash Tests:</b></p> <ol style="list-style-type: none"> <li>1. Offset frontal test (ODB)</li> </ol> <p><b>Other Tests/Assessments:</b></p> <ol style="list-style-type: none"> <li>1. Child protection</li> <li>2. SBR</li> </ol>
	<p><b>2 STAR RATINGS (1-5) FOR ADULT &amp; CHILD</b></p>

## 5. ASEAN NCAP


A new crashworthiness rating program will be introduced in the Southeast Asia region and will be known as ASEAN<sup>6</sup> New Car Assessment Program (ASEAN NCAP).

From Global NCAP<sup>7</sup> website<sup>8</sup>:

*“The Global New Car Assessment Programme (GNCAP) and the Malaysian Institute of Road Safety Research (MIROS) signed a collaborative Memorandum of Understanding in December 2011 to establish a pilot project for a SEA NCAP to elevate motor vehicle safety standards, encourage a market for safer vehicles and raise consumer awareness in the SE Asia region. ANCAP is also a signatory to this MOU as well as the Automobile Associations of Malaysia<sup>9</sup>, Singapore<sup>10</sup>, and The Philippines<sup>11</sup>.”*

The following table (**Table 4**) further describes the ASEAN NCAP:

**Table 4 – ASEAN NCAP**

ASEAN NCAP			
Continent	Program Name	Label	Countries
ASIA	<b>ASEAN New Car Assessment Program</b> Acronym: ASEAN NCAP Established 2012		<ul style="list-style-type: none"> <li>ASEAN region as a whole</li> </ul>
<b>Official Website</b>		<b>Assessment Scope</b>	
<a href="http://www.aseancap.org/">http://www.aseancap.org/</a>		<b>Full Vehicle Crash Tests:</b> <ol style="list-style-type: none"> <li>Offset frontal test (ODB)</li> </ol> <b>Other Tests/Assessments:</b> <ol style="list-style-type: none"> <li>Child protection</li> </ol>	
<b>SINGLE STAR RATING (1-5)</b>			

<sup>6</sup> Association of Southeast Asian Nations

<sup>7</sup> Global New Car Assessment Program (GNCAP)

<sup>8</sup> [http://www.globalncap.org/News/News\\_archive/2012/Pages/SafercarsforSouthEastAsia.aspx](http://www.globalncap.org/News/News_archive/2012/Pages/SafercarsforSouthEastAsia.aspx)

<sup>9</sup> Automobile Association of Malaysia (AAM)

<sup>10</sup> Automobile Association of Singapore (AA Singapore)

<sup>11</sup> Automobile Association Philippines (AAP)



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