Australian Snapshot

AusRAP and ANRAM
iRAP Innovation Workshop, Washington DC 21-22 September 2016

Dave Jones, Chair  AUSRAP Technical Working Group
• **Australian Automobile Association (AAA)** is a member organisation that represents state and territory clubs.

• **Austroads** is the member organisation that represents state and territory road authorities.
2013 AusRAP Assessment of National Highway Network

<table>
<thead>
<tr>
<th>Star Rating</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>5-Star</td>
<td>0%</td>
</tr>
<tr>
<td>4-Star</td>
<td>8%</td>
</tr>
<tr>
<td>3-Star</td>
<td>53%</td>
</tr>
<tr>
<td>2-Star</td>
<td>30%</td>
</tr>
<tr>
<td>1-Star</td>
<td>9%</td>
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National Road Safety Strategy

• State and territory road authorities have been developing their own risk assessment model (ANRAM), which uses the same risk assessment methodology as iRAP
• The National Road Safety Action Plan 2015-2017 includes tasks to:
  – Complete ANRAM model development and establish a Memorandum of Understanding between road agencies and the AAA and clubs (AusRAP) on reporting and communication protocols for star ratings.
  – Use ANRAM to systematically assess and prioritise higher volume and higher risk roads for remedial treatment.
  – Develop risk maps for 50% of the key routes in each state and territory by 2017.
## Progress with star and risk rating

<table>
<thead>
<tr>
<th></th>
<th>Queensland</th>
<th>New South Wales</th>
<th>Victoria</th>
<th>Tasmania</th>
<th>South Australia</th>
<th>Western Australia</th>
<th>Northern Territory</th>
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<tbody>
<tr>
<td>Road authority published targets</td>
<td>85% of travel on the national network on 3 star or better roads</td>
<td></td>
<td></td>
<td>Midland Highway 3-star by 2020.</td>
<td></td>
<td></td>
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<tr>
<td><strong>AUSRAP star rating in progress by road authorities</strong></td>
<td></td>
<td>50,000km</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>ANRAM risk rating in progress by road authorities</strong></td>
<td></td>
<td>3,500km</td>
<td>23,500km</td>
<td></td>
<td>11,500km</td>
<td></td>
<td></td>
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<tr>
<td><strong>AUSRAP risk rating completed by Clubs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20,500km completed across all States and Territories in June 2016 (unpublished)</td>
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</table>
Tasmania – example star rating target

- May 2015 Tasmanian Government announcement
- $500 million over 10 years
- Raise from mostly 1-star and 2-star to 3-star minimum along entire length
What is ANRAM?

**Risk Assessment Module (RAM)**
Uses AusRAP protocols to calculate the relative risk of different types of severe crashes due to the effect of road features, speed and levels of potentially conflicting traffic.

**Crash Prediction Module (CPM)**
Predicts the frequency of severe crashes for each road section given its length, traffic flow, road infrastructure and speed, over a typical five-year period.

**ANRAM Toolkit**
Enables users to carry out investigations of severe crash risk on the road network and analysis of potential treatment programs.

**Crash Validation Module (CVM)**
Computes expected severe crashes by comparing and combining Predicted and Observed severe crashes to produce the ANRAM estimate of severe crashes.
Structure of ANRAM

ANRAM Toolkit
Reporting, analysis of potential road user factors, mass treatment selection, BCRs.

Crash Validation Module (CVM)
Compare and combine Predicted FSI and Observed FSI crashes to produce Potential FSI (also model calibration).

Crash Prediction Module (CPM)
Calculate mean Fatal & Serious Injury (FSI) crashes for each crash type, modified by ANRAM weighting factors to produce Predicted FSI crashes.

Risk Assessment Module (RAM)
Calculate Star Rating Scores (SRS) related to each crash type from road inventory; transform them to ANRAM weight factors.

Road section information, iRAP road inventory & AADTs

Jurisdiction, road stereotype, AADTs

Observed FSI crashes

Future funding program applications

Australian Automobile Association
2016 AusRAP risk rating - examples

Victoria and Queensland – 2016 risk rating (DRAFT)
• Memorandum of Understanding between Australian Automobile Association (for AusRAP), Austroads (for ANRAM), iRAP and ARRB to enable road authorities to use AusRAP star rating in accordance with iRAP protocols.

• ANRAM is a spreadsheet that uses iRAP algorithms, and allows road authorities in Australia to use their data in combination with iRAP technology.

• ANRAM is not available outside of Australia – only Australian Government agencies and AAA club members can access it.
Thank you

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