What is Performance Based Standards (PBS)?
Performance Based Standards (PBS) is a nationally agreed process for assessing new and safer ‘innovative’ heavy vehicles as an alternative to the existing prescriptive system for regulating heavy vehicles.

Road freight is currently regulated by tightly defined prescriptive vehicle mass and dimension rules such as limits of 19 metre overall length and 42.5 tonne Gross Combination Mass for general access. These regulations are widely recognised as being close to their limits because of infrastructure protection and road safety concerns. They also restrict the application of new technology to provide for more productive and safer heavy vehicle designs.

PBS brings an alternative approach to heavy vehicle regulation. It focuses on how well the vehicle behaves on the road, through a set of nationally agreed safety and infrastructure protection standards, rather than how big and heavy (length and mass) it is.

**PBS governs how a vehicle performs, not what it should look like.**

PBS offers the potential for heavy vehicle operators to achieve higher productivity and safety through innovative vehicle design. These gains are typically not available under conventional ‘one size fits all’ prescriptive mass and dimension rules or the state-based permit system.

Designers can use engineering and technology innovation to design a vehicle which complies to 20 performance measures related to issues such as vehicle stability, rollover risk, the ability to turn in traffic within a safe ‘envelope’ and manage ‘tailswing’, and measures to protect roads and bridges from excessive ‘wear and tear’.

The central principle of the PBS framework is that vehicles operating under these arrangements impose ‘no greater road damage’ than the existing heavy vehicle fleet on a given network. For example, a PBS vehicle operating on Higher Mass Limit (HML) routes will only be able to operate at HML axle group masses.

PBS vehicles will have to meet corresponding PBS performance standards. For example a Level 2B vehicle is required to meet all of the Level 2 safety and infrastructure related performance standards. Therefore vehicle performance factors, such as swept path, braking, acceleration, stability, safety, and pavement and bridge effects will be equivalent, or improved, compared to current prescriptive B-doubles. More information on PBS is available on the National Transport Commission (NTC) website www.ntc.gov.au

What are the benefits of PBS?
The NTC’s Twice the Task report found that the land transport task will almost double between 2000 and 2020. ‘Doing nothing’ will result in another 50,000 trucks on Australian roads, with one in four vehicles in our cities carrying freight.

PBS vehicles are able to carry more freight and are safer on the road than the ‘off-the-shelf’ one-size-fits-all vehicles they replace. The end result is fewer trucks on the road for the same freight task, improved road safety, less transport emissions and a more competitive domestic economy.
PBS Road Network Classification

The nation's road network has been classified into four main PBS levels which directly correspond with current B-double and road train dimensions. The exception is 'general access', where a 1 m length increase has been allowed for PBS level 1 vehicles. Four corresponding levels of performance standard will ensure the vehicle is matched to the right road network. For example, an 'over-length' semi-trailer fitted with self-steering axles could operate on general access freight routes providing that the vehicle meets all 'Level 1' (general access) performance standards. The basic principle is that a vehicle seeking wider access to the road network must meet more stringent performance standards.

PBS road classification levels and corresponding maximum vehicle lengths are detailed below in Table 1.

<table>
<thead>
<tr>
<th>PBS Road Classification</th>
<th>Maximum Vehicle Length (m)</th>
<th>Equivalent Prescriptive Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>20</td>
<td>General Access</td>
</tr>
<tr>
<td>Level 2A</td>
<td>26</td>
<td>B-Double Routes</td>
</tr>
<tr>
<td>Level 2B</td>
<td>30</td>
<td>Specially Assessed Network</td>
</tr>
<tr>
<td>Level 3A</td>
<td>36.5</td>
<td>Type 1 Road Train Routes</td>
</tr>
<tr>
<td>Level 3B</td>
<td>42</td>
<td>Specially Assessed Network</td>
</tr>
<tr>
<td>Level 4A</td>
<td>53.5</td>
<td>Type 2 Road Train Routes</td>
</tr>
<tr>
<td>Level 4B</td>
<td>60</td>
<td>Specially Assessed Network</td>
</tr>
</tbody>
</table>

Table 1: PBS Road Classification Levels and Corresponding Maximum Vehicle Lengths

Operating Requirements

PBS vehicles operate under permits issued by the Department of Transport and Main Roads. Specific operating conditions and identified routes are included in each permit. As each vehicle design is unique, conditions of operation and wording may vary slightly from permit to permit. The permits for these vehicles must be carried and produced upon request from an Authorised Officer.

Where there is a demonstrated risk in regards to road safety or infrastructure, vehicles will be monitored for route compliance, and/or time-of-day (temporal) operations via Intelligent Access Program (IAP) satellite-based tracking. This process will ensure heavier payloads do not damage vulnerable infrastructure, such as older bridges, and check that time-of-day vehicles stay on approved routes and operating restrictions are complied with.

Do you have an idea?

Applications for PBS vehicles are considered by the national PBS Review Panel (PRP). A preliminary step is to consider what benefits, in terms of safety and productivity, may be achieved through PBS. Those benefits should be assessed against the likely costs and risks of submitting an application.
Potential applicants are advised to approach relevant State and Territory road agencies to discuss road network access at design development stage. Understanding the level of road network access likely to be granted by road agencies is crucial to assessing the benefits before submitting an application. Queensland road access enquiries can be made via hvaoperations@tmr.qld.gov.au. Potential applicants are then advised to approach an accredited PBS Vehicle Assessor to consider design options, details of these assessors can be obtained via www.ntc.gov.au. The PBS assessor will then lead the applicant through the process to achieve PRP design approval.

It is very important that both PRP design approval and road access are confirmed before building a PBS vehicle. Refer to NTC’s guide on gaining approval and the performance standards for a PBS vehicle via www.ntc.gov.au.

**Simplified Procedure for PBS in Queensland**

1. **Qld Contact Details**
   - Dept of Transport & Main Roads
   - Heavy Vehicle Access (Operations)
   - hvaoperations@tmr.qld.gov.au
   - Additional information available on - www.tmr.qld.gov.au

2. **NTC Contact Details**
   - Technical Advisor
   - PBS Review Panel
   - (03) 9236 5032
   - Executive Officer
   - PRP Secretariat
   - (03) 9236 5015
   - Additional information available on - www.ntc.gov.au