

Annex: Problem statements under the Gov-PACT Programme

1.	<u>Corrosion detection methods for lamp poles</u> Interested parties are invited to propose alternative solutions to detect the corrosion levels found in lamp posts located along roads and commuter infrastructure. Currently, authorities are heavily-reliant on visual inspections and the use of pulse induction technique to detect corrosion levels during the inspection of our lamp posts. With more options to detect corrosion, we aim to conduct the maintenance of lamp posts in a more productive manner.
2.	<u>Conducting inspection of road tunnel walls without removal of cladding</u> To inspect and maintain our road tunnels, the current process requires workers to remove and replace the metal claddings covering tunnel's concrete layer. This process is time-consuming and manpower-intensive. Interested parties are invited to propose solutions that can identify any defects along the tunnel's concrete layer in a more efficient manner.
3.	<u>Improving safety of over-height lorries</u> We invite interested parties to propose systems to immobilise overheight lorries when their cranes are not properly stowed. The solutions should reduce the risk of collision with overhead structures.
4.	<u>Efficient cleaning of sump pits</u> The current cleaning of sump pits requires workers to enter these confined spaces and at height. It is labour-intensive, time-consuming and carries certain risks. Interested parties are invited to propose solutions leveraging technology that can enable the more efficient method of cleaning without workers entering the confined space.
5.	<u>Chassis and Engine Number Identifier</u> Currently, there are instances where vehicle inspectors encounter difficulties in identifying vehicle chassis and engine numbers during annual vehicle inspections due to tampering or carbon from vehicle engine combustion. Interested parties are invited to provide a portable system or device that can quickly provide an accurate assessment of chassis and engine number under all conditions.
6.	<u>Measurement of street lighting levels</u> Currently, inspection of street lights is carried out on routinely such that timely maintenance is carried out to ensure brightness levels are up to LTA standards along our roads and commuter infrastructure. However, the current inspection methods do not allow for real-time location mapping of specific locations of street lamps which require maintenance. Interested parties are invited to propose solutions or systems capable of carrying out real-time video analytics of street light inspections, using 360-degree cameras capable of operating in vehicle underpasses and tunnels without GPS-signal. This will enable LTA to carry out more efficient maintenance of our street lights.

7.	<p><u>Maintaining standards of road surfaces</u></p> <p>Currently, localised road works can be carried out by different parties. To ensure that the quality of the reinstatement works meet LTA's standards, interested parties are invited to provide more cost-efficient and portable equipment that can accurately measure the riding quality index of the reinstated road surface.</p>
8.	<p><u>Wear index of road markings</u></p> <p>Currently, inspections of road markings are carried out visually, and are subjective in nature. Interested parties are invited to provide equipment or methods using contactless technology to capture the road markings condition accurately.</p>
9.	<p><u>Maintenance of bus tyres</u></p> <p>Currently bus tyre-changing operations is labour-intensive and requires bus technicians to manually remove and install the tyres. Interested parties are invited to provide an automated bus-tyre changing system using assistive technology, to reduce overall bus downtime.</p>