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To accurately measure street lighting levels and produce report with average lux results, uniformity, and 360 degrees images/videos

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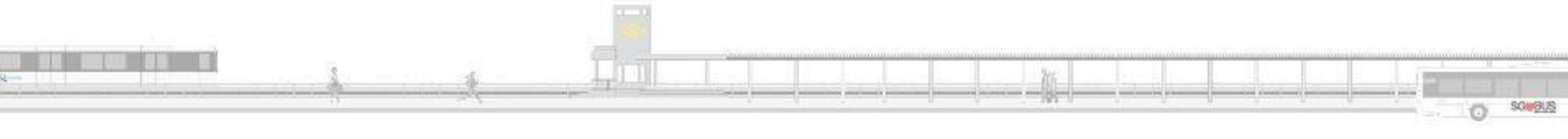

Background

- The LTA maintains more than **110,000** street lights along public roads in Singapore.
- Street lighting levels for the whole island is measured on a **half-yearly** basis.
- The LTA receive an average of **20** feedbacks regarding dim lighting per month.
- The contractor is activated on **ad-hoc** basis to measure the lighting levels at the feedback site.
- Minimum of **9 points** between 2 lamp poles.

Lux Measurement Sketch

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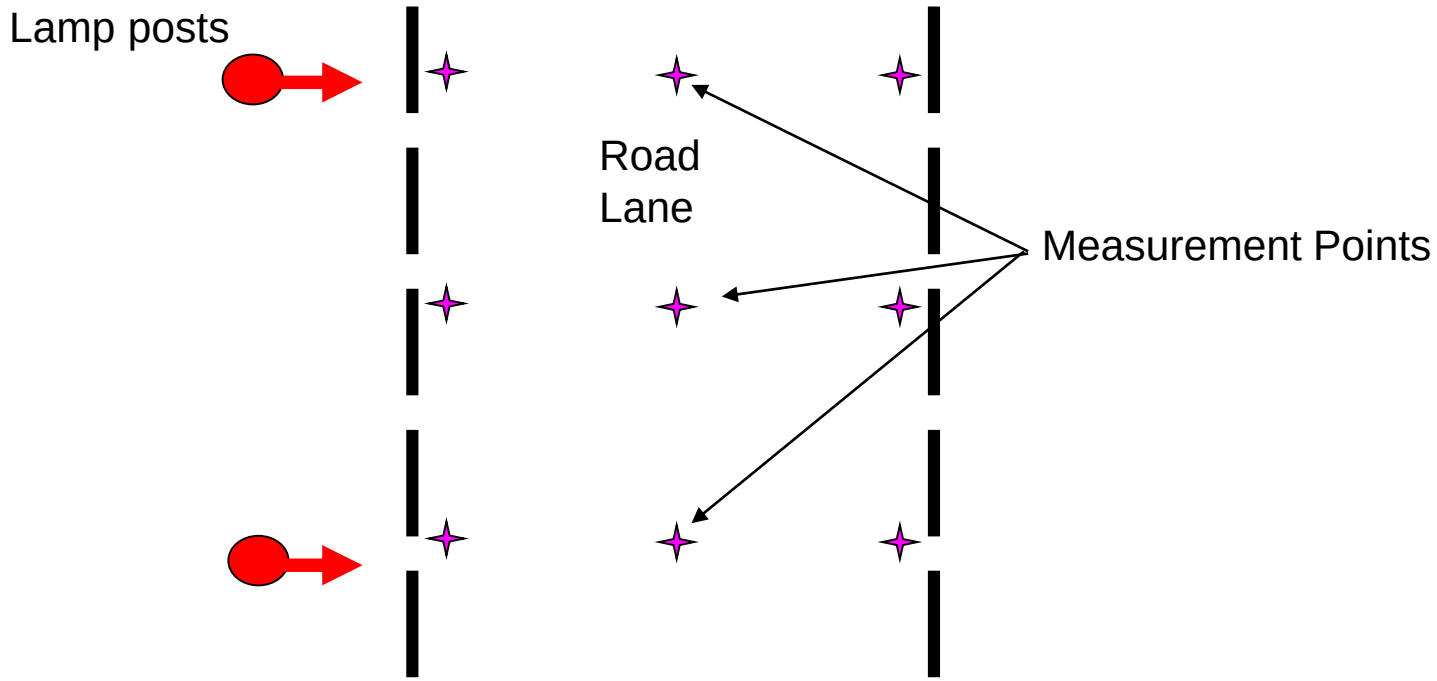
Minimum number of measurement points between 2 lamp posts



Photos of existing ASLMS

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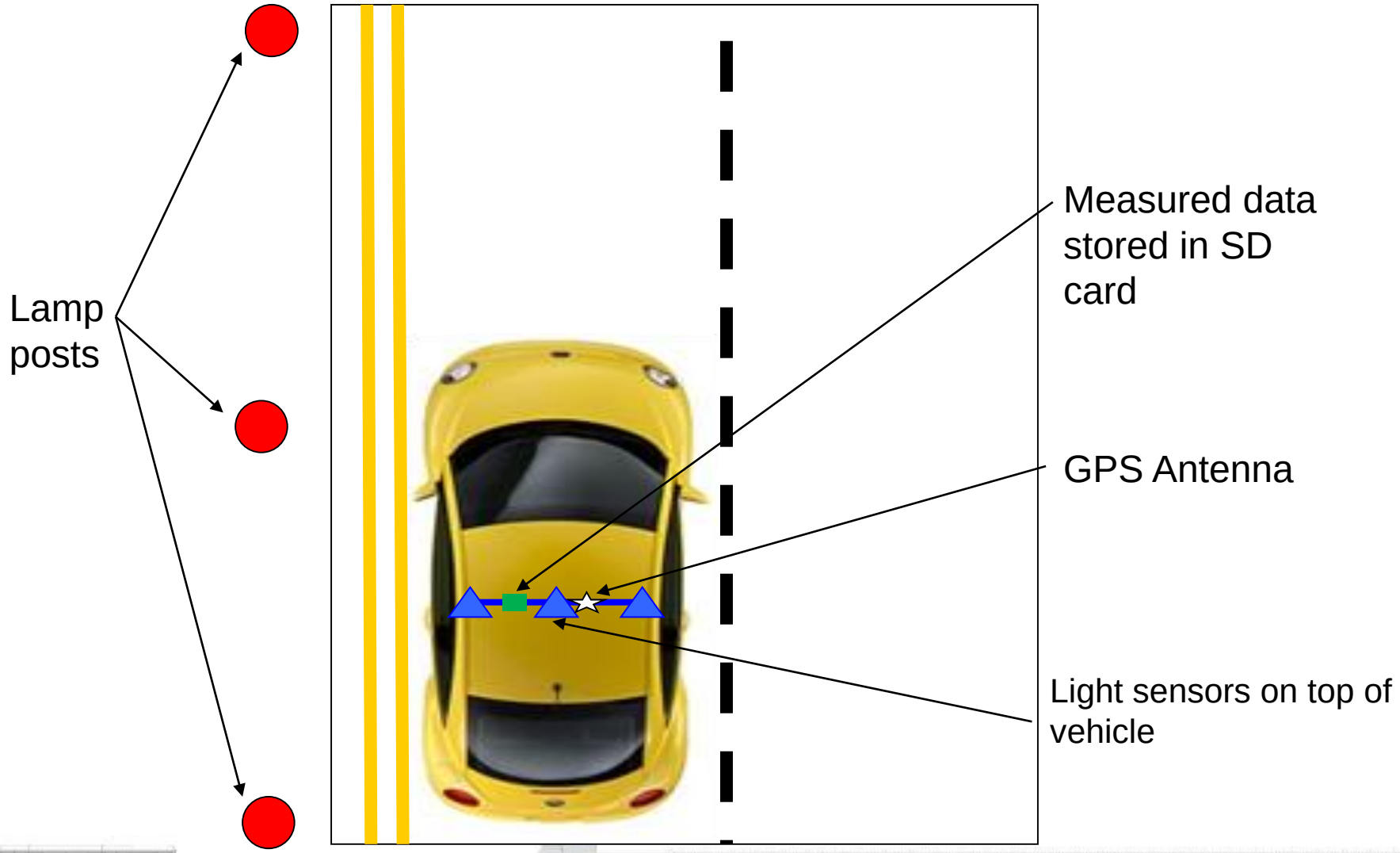
Automated Street Light Measurement System



Photos of existing ASLMS

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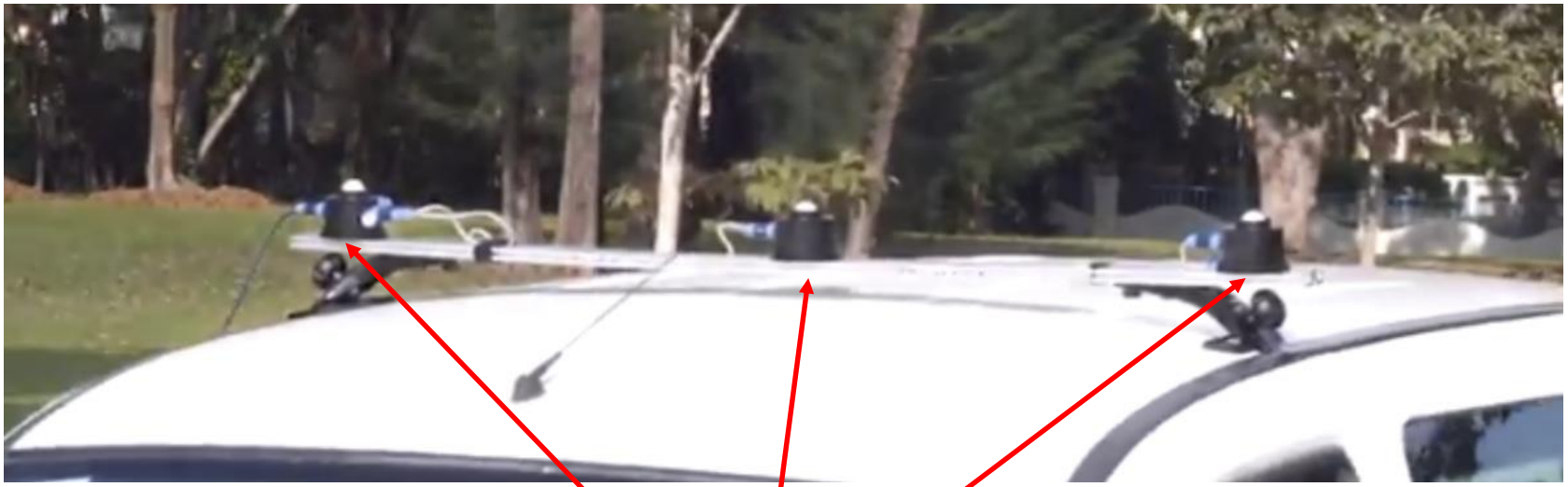
Automated Street Light Measurement System



Example of ASLMS Report

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Road Name: Jalan Tiga *Post-Lux*

Average: 31.94 lux Uniformity: 0.3

Date Taken: 09/02/2019

Example of ASLMS Dark Spot

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Road Name: West Coast Highway
Location: P75 to P77
Average: 27.78 lux Uniformity: 0.05

The Missing Gap

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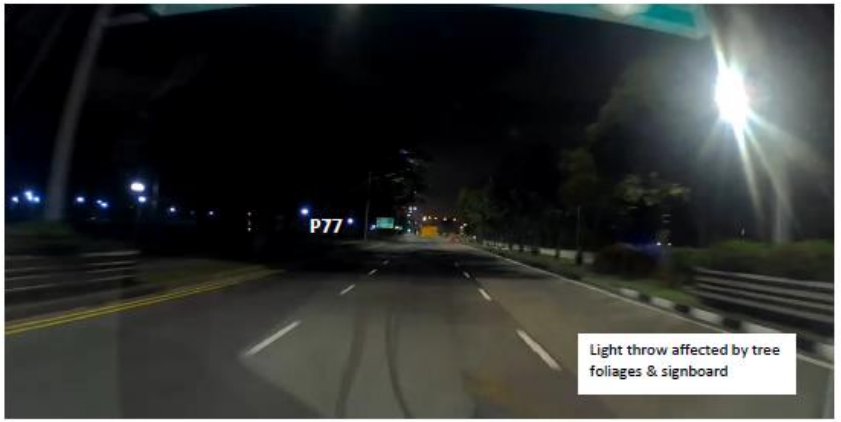
Road Name: West Coast Highway

Location: P75 to P77

Average: 27.78 lux Uniformity: 0.05



Technical

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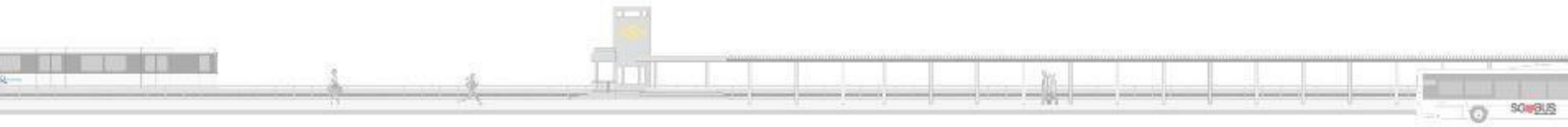
- Lux measurement accuracy within **1 lux** and range of 5000 lux
- GPS accuracy of **5m** radius
- Vehicle speed up to **90km/h**
- Lux measurement intervals are about **50cm or 0.5m** apart
- Re-calibration **yearly**



Limitations in existing ASLMS

- **Requires GPS signal** to accurately plot the lux measurement points

- **No real-time photos/videos recorded** in-sync to visualise the environment, thus contractors may be activated again to take photos of “dark spots” to uncover the potential cause

Proposed Solutions to enhance ASLMS

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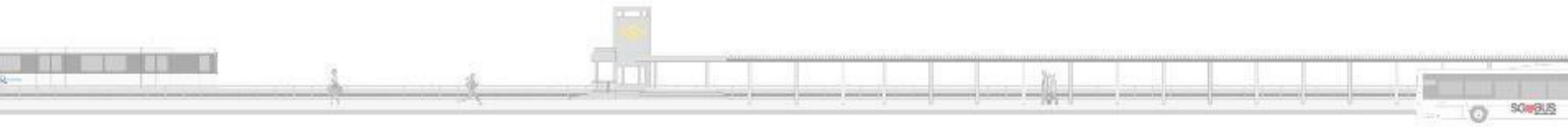
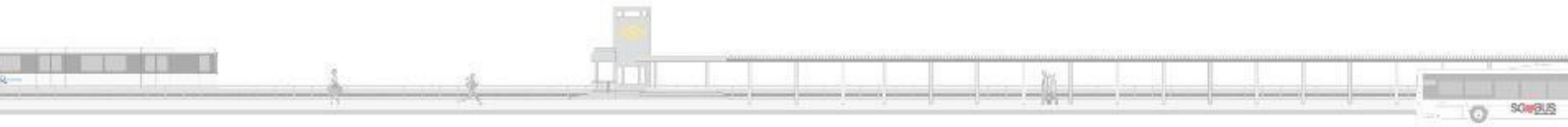
- Proposed solution should be an **improvement** to the existing ASLMS
- Use of **geo-tagging** to measure lighting points when **GPS signal is loss or weak**
- Use of **360 degrees camera** to record video that is **in-sync with lighting measurement**
  - To **enhance the ASLMS report** and aid in the visualisation of on-site conditions
  - Camera's settings such as ISO/Aperture/Shutter Speed shall not automatically adjust the video so that brightness of **images are consistent**



Timeline

- Q3 2020 – Proposed Prototype
- Q2 2021 – Pilot Deployment
- Q4 2021 – Full Implementation

Evaluation Criterion	Weightage (%)
1. Technical feasibility of solution	30
2. Innovation	20
3. Economic Feasibility and Commercialization Potential (Include development cost and final product cost)	30
4. Capacity and Expertise to Execute Project	20
Total Score	100



The End

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THANK YOU