TA-6763 REG: ACCELERATING INNOVATION IN TRANSPORT

ROAD SAFETY PERFORMANCE INDICATOR DATA COLLECTION

(55119-001)

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Methodology Report

Data Demonstration

Full Data Collection

This assignment has been created to support the Asia-Pacific Road Safety Observatory (APRSO) mission to improve the quality of road safety data across the region, to monitor the progression of road safety over time, and to compare performance between countries. This work will focus on collecting, collating and analysing data in order to quantify three target Safety Performance Indicators (SPI):

1. That part of a nation's road network carrying 75% of traffic;
2. The proportion of traffic travelling over the speed limit on the 75% of traffic network; and
3. The proportion of two-wheeler users wearing helmets on the 75% of traffic network.

Supporting Policy and Programmes with Data

Target 4: By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.

Target 6: By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.

Data Options – Traffic & Speed

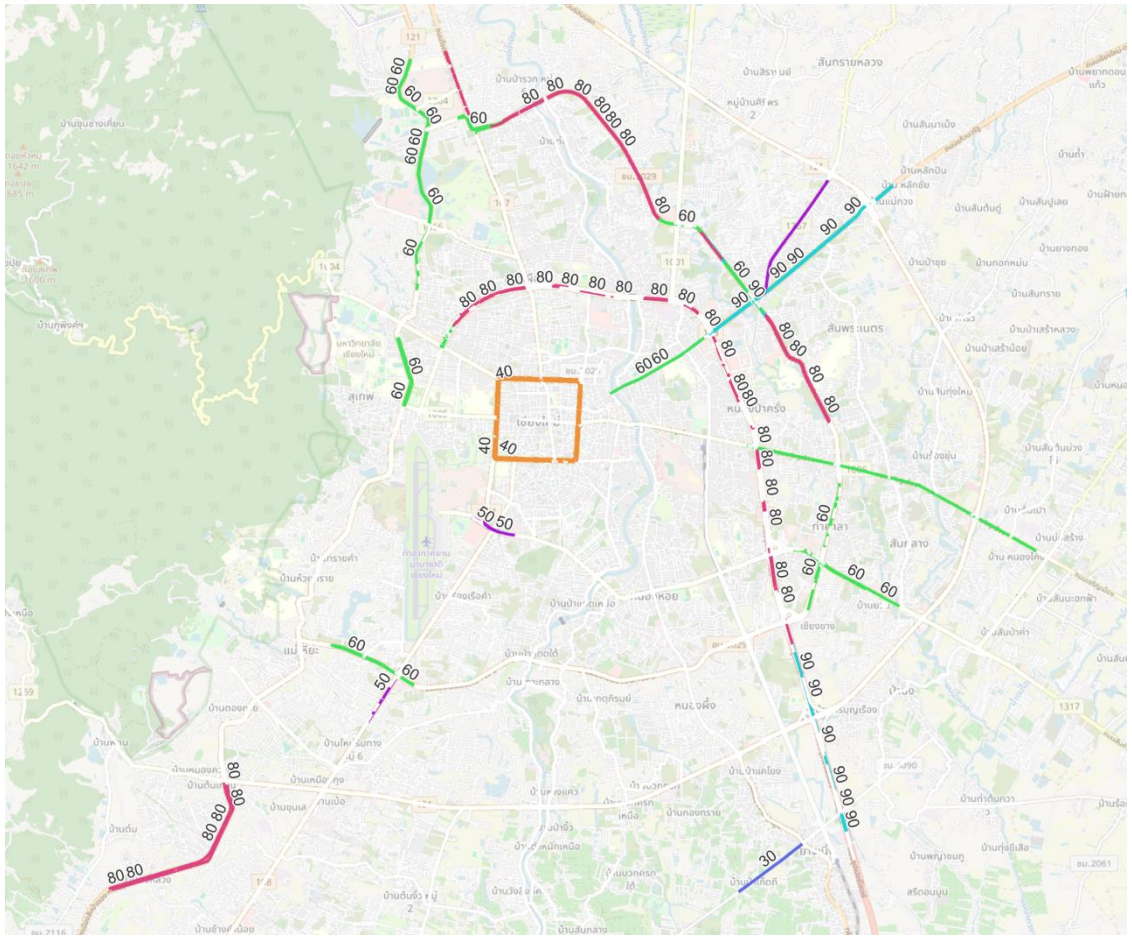
- Many High Income Countries have invested in national networks of traffic counters to monitor traffic and speeds.
- This project explores how existing data from different sources can produce similar outputs at significantly lower costs.
- Increasing availability of GPS data globally offers a rich source of data in many countries; in others Satellite images (EO) can be used to detect and monitor traffic.
- Many different providers were approached with TomTom selected due to the best available coverage.
- Purchasing data for entire networks would be costly and not required for an SPI approach involving samples on typical parts of the road network.

Data Options – Helmet Wearing

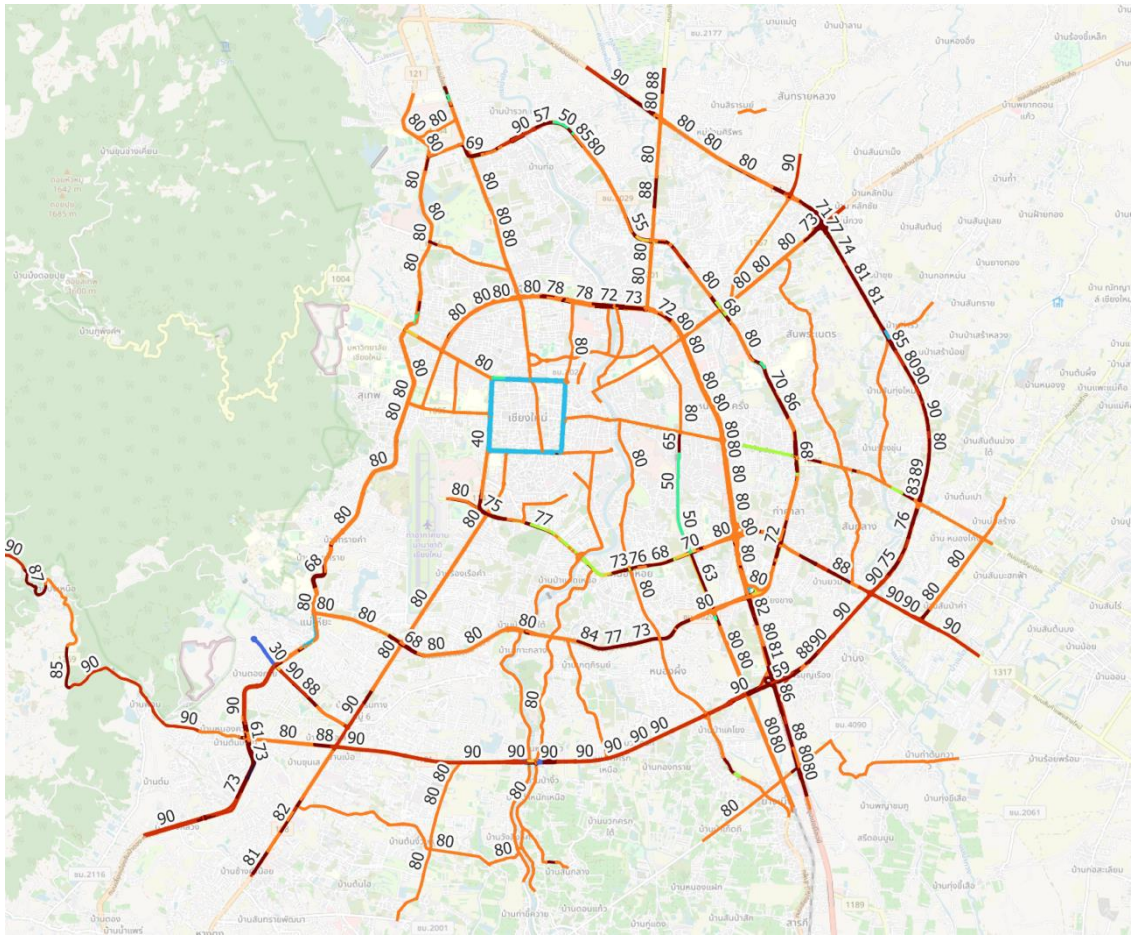
- Roadside observation is the preferred method of assessing helmet-wearing but this requires manual assessment and is typically only used at a small number of locations.
- Open-Source Street View images from Mapillary cover many millions of KM of roads and can be used without licence to detect vehicles and show helmet-wearing.
- Previous papers have shown that AI tools and techniques can be used to assess helmet wearing with high-success rates, although these have not been demonstrated at large scale.

Speed Limit Maps

Overture / OSM



TomTom



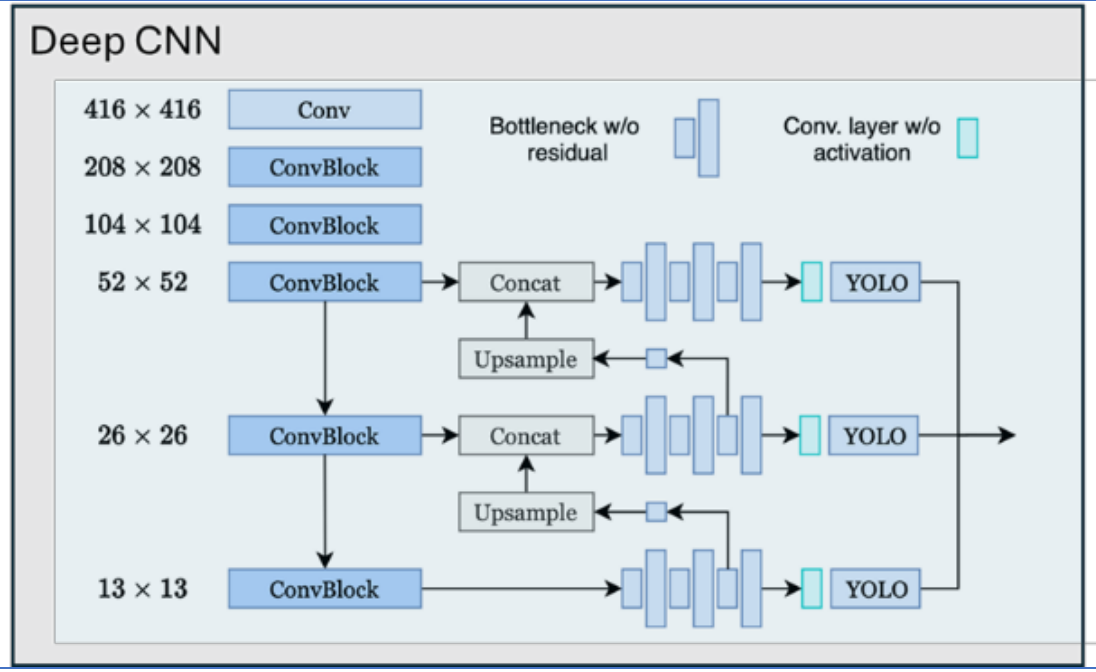
Data Ordering and Results

- TomTom Traffic Stats API allows data to be ordered for short or large road sections very quickly.
- Overture network geometry used to place orders for tens of thousands of road sections in both countries.
- Data procured for the whole of 2024 with 10,260,000,000 trips sampled to support the 75% travel mapping.

AI Detection Methods

AI Detection Methods

Input image



Predictions

Next Steps

- Full Reports and data to be published in due course
- Plans for an in-depth webinar with the project team to discuss methodology and results
- Explore potential to repeat the work in many more countries
- Consider benefits of network-wide assessment versus smaller samples.
- How can SPI be measured over time?
- Is there further information than can support policy, education and enforcement?

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