

DRIVER (Data for Road Incident Visualization, Evaluation, and Reporting)

The World Bank's Tool for Crash Data Visualization, Evaluation and Reporting

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The World Bank, Singapore

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WHAT?

DRIVER – Data for Road Incident Visualization, Evaluation, & Reporting system

Web-based and open source system for geospatially recording & analyzing road crashes

A way to link multiple agencies as well as a means to standardize terms & definitions for reporting crash data

A suite of analytical tools to support evidence-based investments & policies & a platform for monitoring the impact of interventions

HOW?

Available wherever Open Street Map is available

Fields/variable easily modifiable

Can be adapted and maintained by local developer

DRIVER overview

<https://roadsafety.gov.ph>

<https://thailand.roadsafety.io>

<https://vietnam.roadsafety.io>

<https://vidasegura.prefeitura.sp.gov.br/plataforma>

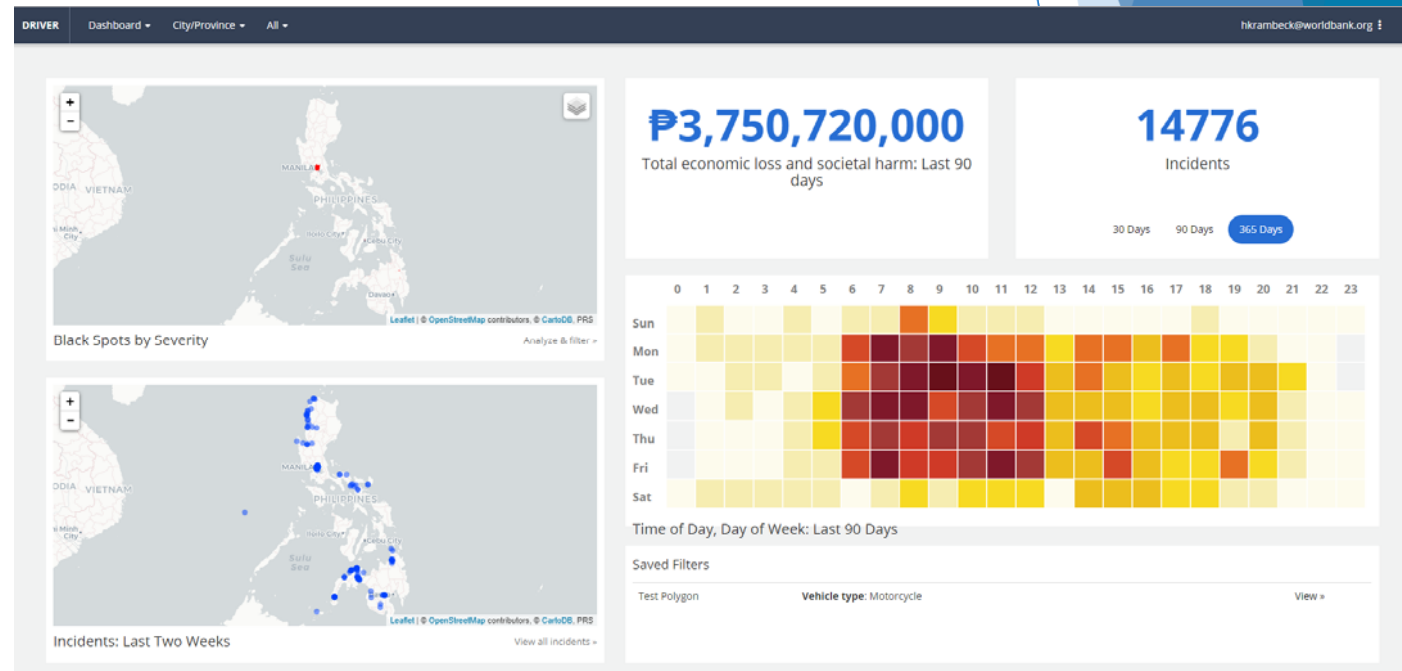
<https://brazil.roadsafety.io>

<https://bangladesh.roadsafety.io>

<https://mumbai.roadsafety.io>

<https://laos.roadsafety.io>

.....



DRIVER – How does it work?

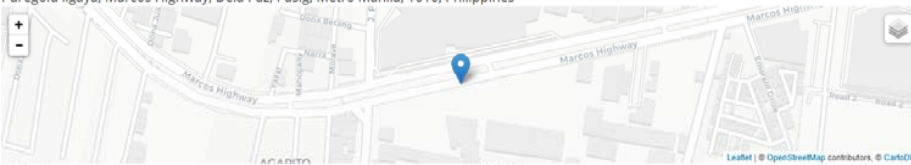
The Interface – Incident recording

Incident Details

Incident Details Vehicles People Photos Notes

OCCURRED
 June 11, 2019, 9:09:56
MODIFIED
 June 11, 2019, 10:35:18
LOCATION
 Puregold ligaya, Marcos Highway, Dela Paz, Pasig, Metro Manila, 1610, Philippines

CREATED
 June 11, 2019, 10:35:18
MODIFIED BY
 metrobase8@gmail.com



LATITUDE
14.61889
WEATHER
Partly cloudy day
 Powered by Forecast

LONGITUDE
121.09385
LIGHT
Day
SEVERITY
Property Damage
COLLISION TYPE
Side swipe
LOCATION APPROXIMATE

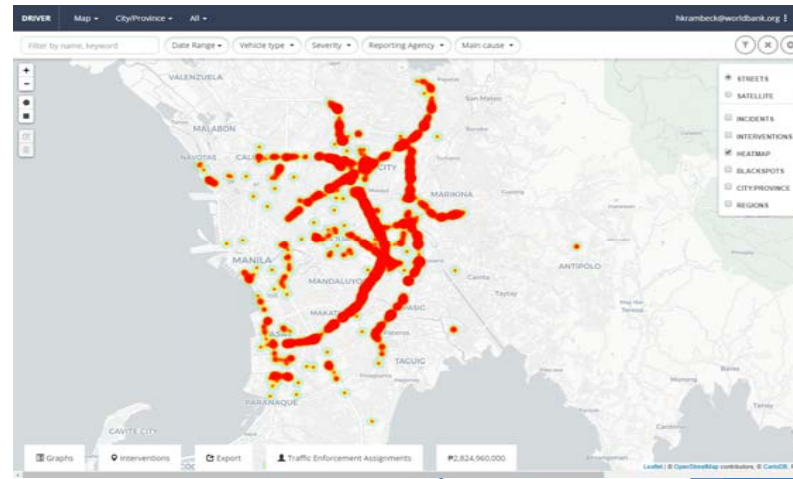
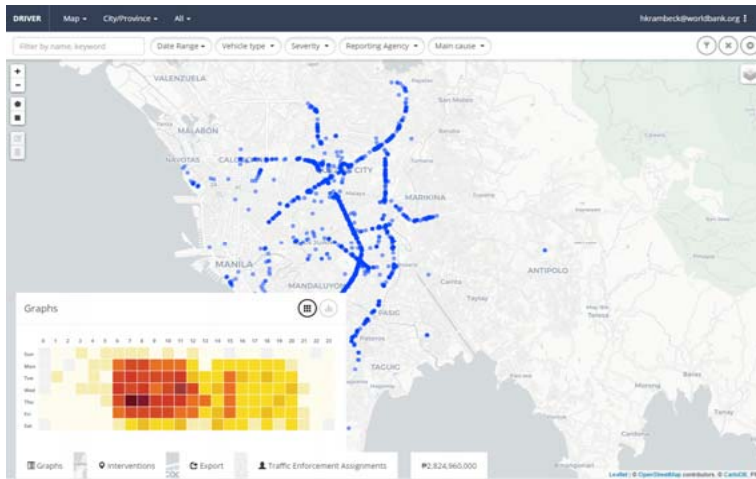
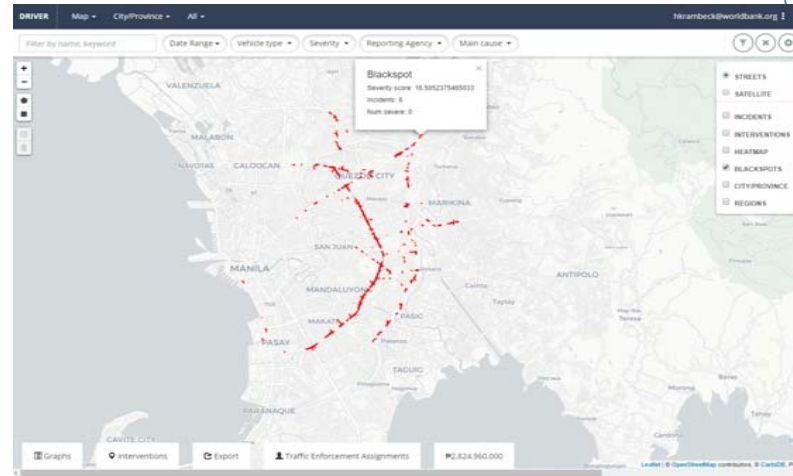
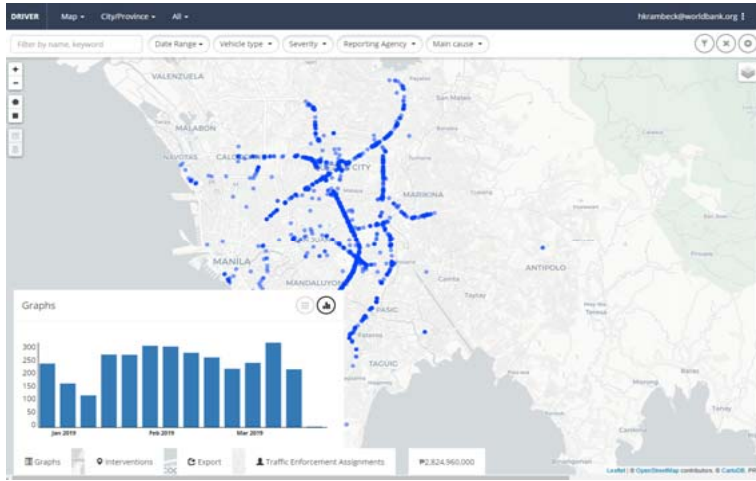
MAIN CAUSE
Human error
REPORTING AGENCY
MMDA Metrobase

DRIVER Record List City/Province All hkrambeck@worldbank.org

Filter by name, keyword Date Range Vehicle type Severity Reporting Agency Main cause

| DATE & TIME | SEVERITY | MAIN CAUSE | COLLISION TYPE | REPORTING AGENCY | View | Edit |
|---------------------|-------------------------|-------------|-------------------------|------------------|------|------|
| 6/11/2019, 9:43:01 | Property Damage | Human error | Rear end | MMDA Metrobase | View | Edit |
| 6/11/2019, 9:14:20 | Injury: Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 9:09:56 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:56:24 | Property Damage | Human error | Hit object in road | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:40:54 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:31:54 | Property Damage | Human error | Rear end | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:25:26 | Injury: Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:12:30 | Injury: Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:06:42 | Property Damage | Human error | Rear end | MMDA Metrobase | View | Edit |
| 6/11/2019, 8:02:20 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/11/2019, 6:39:38 | Injury: Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 21:26:57 | Injury | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 20:50:22 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 19:05:11 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 18:53:17 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 18:26:19 | Property Damage | Human error | Side swipe | MMDA Metrobase | View | Edit |
| 6/10/2019, 17:52:01 | Injury: Property Damage | Human error | Overturned vehicle | MMDA Metrobase | View | Edit |
| 6/10/2019, 17:07:37 | Property Damage | Human error | Other (see description) | MMDA Metrobase | View | Edit |

The Interface – Incident visualization and analysis



Smartphone app

ROAD INCIDENT DATA SYSTEM

Incident Reporting

The Philippine Incident Reporting app allows for in-the-field data entry into the Road Incident Data System to capture reports.

Sign-in to account

Contact DOST Support

Incident Details Next

WHEN DID THIS INCIDENT OCCUR?
01/01/2015 00:00

INCIDENT TYPE
Traffic Accident

COLLISION TYPE
Head On

MAIN CAUSE OF ACCIDENT
Human Error


WHERE DID THE INCIDENT OCCUR?
25th St and 5th Ave

WEATHER CONDITIONS LIGHT CONDITIONS
Clear Daytime

Incident Photos Next

Take photos of documents, incident details, weather and road conditions, vehicle defects, and other things you might need to reference again in the future.

Take a photo



DRIVER pilots

Vientiane

DRIVER ແສນທີ່ ແຂວງ ບັງເກີດ

ກຳນົດຈັດວຽກໂດຍຄື, ສັບສຳຄັນ

ວະດາງວັນທີ ປະເພດເຂົ້າທາງ ວິດເປັເລ ຄົນບາດເຈັບ

ເສັ້ນສະແດງການ ການແຈກແຈງ ເອັກສປອດ ດຽກການບັງຄັບໃຊ້ກິດຈະກຳລະຈອນ K1,690

ອຸປັດຕິເຫດ ລາຍລະອຽດ

ດາຍລະອຽດຂອງເຫດການ ວິດ ສູນພາບຜາຍໃບ ຜູ້ເຂົ້າຂ່ວມການສັບບະຊຸດ ຜູ້ເກີດອຸບະຕິເຫດຜ່ານ

ການເກີດຂຶ້ນ 4 ກໍລະກົດ, 2018, 21:51:00 ສ້າງຂຶ້ນເວລາ 14 ພະສິກາ, 2018, 16:44:29

MODIFIED 14 ພະສິກາ, 2018, 16:44:29 MODIFIED BY phonexaivlay6@gmail.com

ສາຍພູມຄ່າງ

ເສັ້ນສະແດງເລກ 18.02622 ເສັ້ນສະແດງ 102.65157

ສາຍພູມອາກາດ ກາງຄືນ ຕອກສຳເລັດ

ຮູບລັກ ຮູບລັກ ຮູບລັກ ຮູບລັກ

ເມັສ ໄຊເກນີ ສັບບາດເຈັບ

ສັບບາດເຈັບ

ໄລຍະທີ່ 1. ມີ ສາຍພູມແຕ່ລະວິເຫດ 2. ກາງຄືນ; 4. ສັບອຸປະກອນລັກ

ສູນການຄ້າ 11 ບາດເຈັບ-ເສຍຊີວິດ

ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 3. ມຳຜ

ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 23 ມາດຕາກວາເລັດ

ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 3. ບໍ່ຮັກສາໄວຍຸງເຫງ່າງ

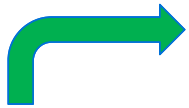
ເສັ້ນສະແດງ 1. ທາງຄື; 6. ທາງແຈ້ງ; 9. ທາງຝ່າງ ສາຍພູມຊັບເປີ 2. ບໍ່ຕື່ມ ເວລາເກີດອຸບະຕິເຫດ ສູນການຄ້າ 2. ຕັ້ງທຳຜ ສູນການຄ້າ 12 ບາດເຈັບ-ເສຍຊີວິດ 5 ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 6 ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 12 ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 22 ປະເພດພາຫະນະທີ່ເກີດອຸບະຕິເຫດ 24 ມາດຕາກວາເລັດ 9 ຕາອະໄພນາມ

ປີ 06

Mumbai

WHAT

SHORT-TERM



CRASH SCENE



MEDIUM TO LONG-TERM



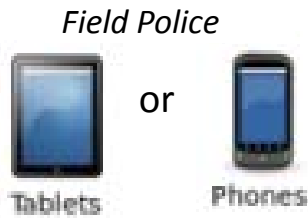
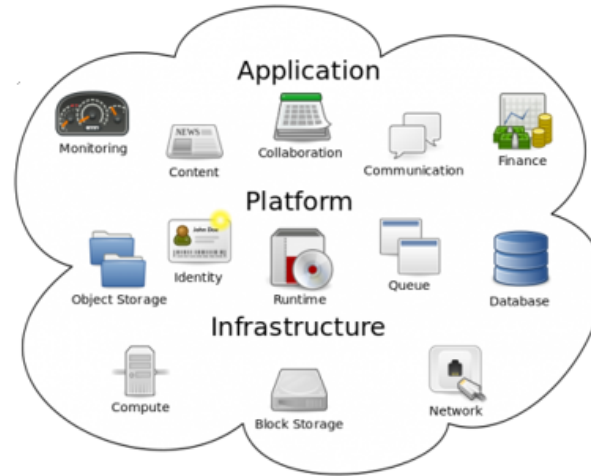
Field Police

| Sl. No. | Area | Police Station | Officer | Vehicle No. | Driver Name | Vehicle Type | Color | Year | Remarks |
|---------|------|----------------|---------|-------------|-------------|--------------|-------|------|---------|
| 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... |



Tablets use (Screenshot) - PMPM Data Editor

| Sl. No. | Area | Police Station | Officer | Vehicle No. | Driver Name | Vehicle Type | Color | Year | Remarks |
|---------|------|----------------|---------|-------------|-------------|--------------|-------|------|---------|
| 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... |

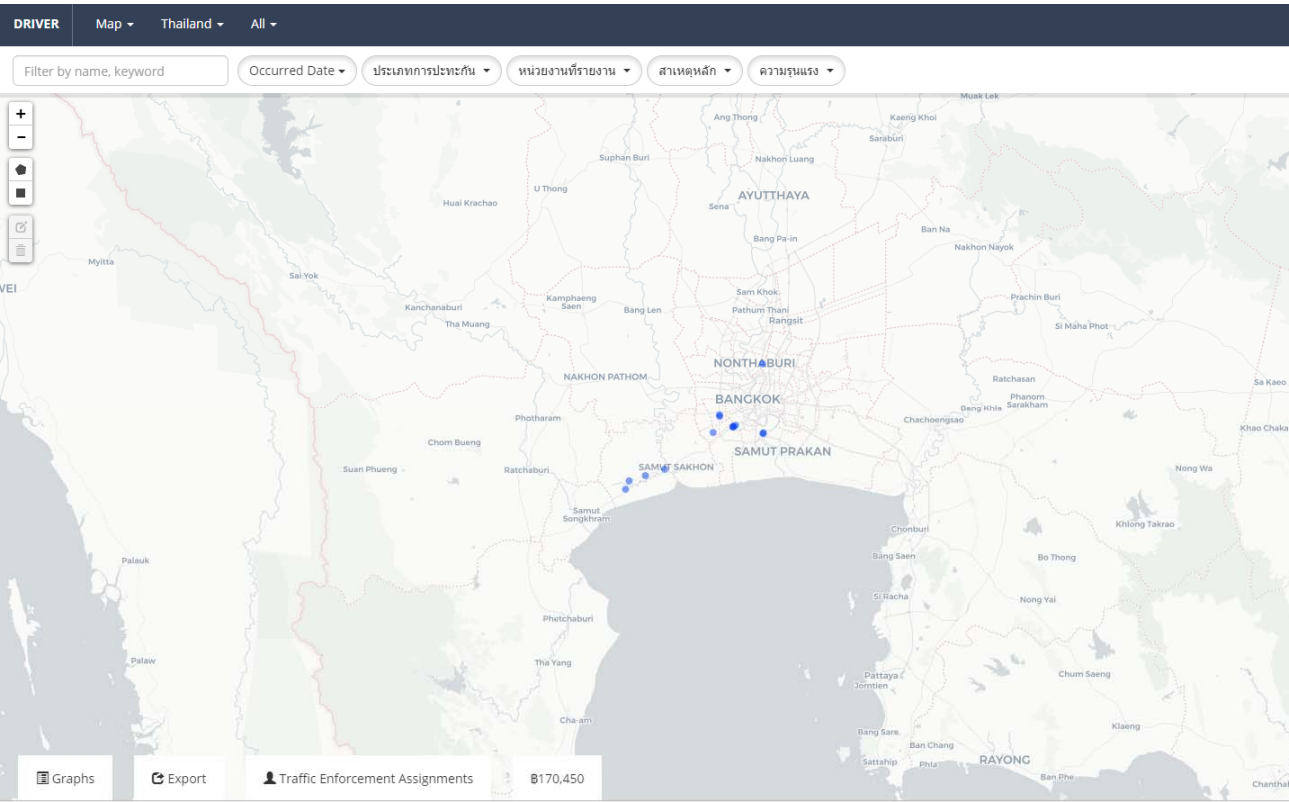


5. Road related details

| Sl. No. | Road Name | Area | Police Station | Officer | Vehicle No. | Driver Name | Vehicle Type | Color | Year | Remarks |
|---------|-----------|------|----------------|---------|-------------|-------------|--------------|-------|------|---------|
| 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |



Bangkok



Incident Details

[View](#) [Edit](#)

| | | | |
|--|----------|----|------------------------|
| รายละเอียดเหตุการณ์ | ยานพาหนะ | คน | ภาพถ่าย |
| OCCURRED | | | CREATED |
| May 17, 2019, 11:25:00 | | | June 6, 2019, 19:44:40 |
| MODIFIED | | | MODIFIED BY |
| June 6, 2019, 19:58:50 | | | incubusv@gmail.com |
| LOCATION | | | |
| พระประแดง, บางกระสอบ, จังหวัดสมุทรปราการ, 10130, ประเทศไทย | | | |

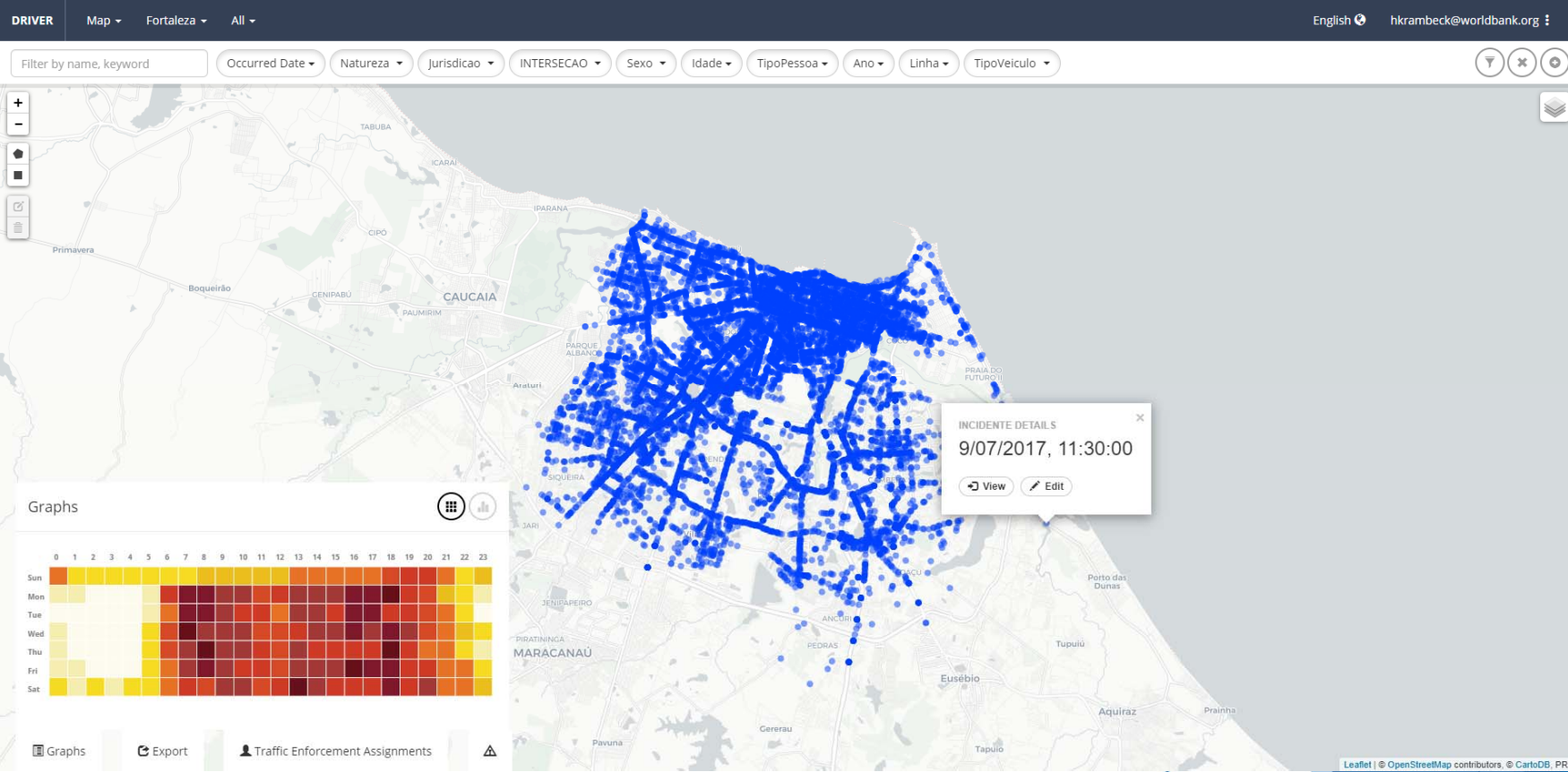
LATITUDE: 13.64912
 LONGITUDE: 100.54053
 WEATHER: ☀️ Clear day
 Powered by Forecast

สาเหตุหลัก
 ผู้ใช้ถนนบกพร่อง
 รายละเอียด

เมื่อเวลาประมาณ 11.25 น. ของวันที่ 17 พฤษภาคม 2562 บริเวณถนนที่รามผิงถนน
 ผู้เจ้าสัวมิ่งพรหม มีรถบรรทุกทวง 22 ล้อ ยี่ห้ออู่ชูชี่ สี
 ขาว ทิวหมายเลขทะเบียน 81-9812 ซีมอมี ท้าย
 หมายเลขทะเบียน 81-9813 ซีมอมี ชิมมาจากด้าน
 กาญจนามุ่งหน้าไปทาง ถนนที่รามผิงถนน
 ผู้เจ้าสัวมิ่งพรหม เบดกไม่ทันเสียหลักชนท้ายรถบรรทุก 10
 ล้อ ยี่ห้ออู่ชูชี่ สีเขียว หมายเลขทะเบียน 61-8855
 กทม. ชิมมาจากด้านกาญจนามุ่งหน้าไปทาง ถนนที่ราม
 ผิงถนนผู้เจ้าสัวมิ่งพรหม กระเด็นไปชนเบาะเหล็กนอกทาง
 โค้งหักจำนวน 1 อัน มีผู้ได้รับบาดเจ็บเพียง 1 ราย
 แชนเท็ก เจ้าหน้าที่มูลนิธิเมื่อได้ตั้งส่งโรงพยาบาลรักษา
 รมชียุทธการ มีทรัพย์สินเสียหายราชการเสียหายเป็นเบาะ
 เหล็กนอกทางโค้งหักจำนวน 1 อัน ปีการจราจร 1
 ช่องทาง สามารถสัญจรได้ 1 ช่องทาง ได้มีเจ้าหน้าที่
 ปลูก และสายตรวจและเจ้าหน้าที่ตำรวจสภ.สำโรงได้
 อำนวยความสะดวกในการจราจรและรถการเคลื่อนย้าย
 ออกพื้นที่ขึ้น รถที่เกิดเหตุได้เคลื่อนย้ายออกจากพื้นที่
 เวลา 18.26 น. ครั้น

ความรุนแรง
 Day
 ความรุนแรง
 บาดเจ็บ
 ประเภทการประทุกัน
 ชนท้าย
 หน่วยงานที่รายงาน
 หน่วยงานจราจรท้องถิ่น

Fortaleza



Sao Paulo

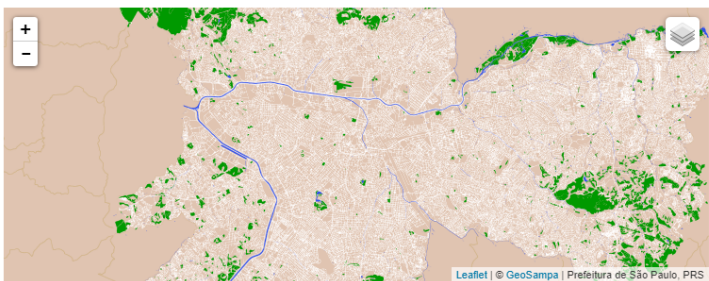


Painel ▾ Região ▾ Todas ▾

Contribua!

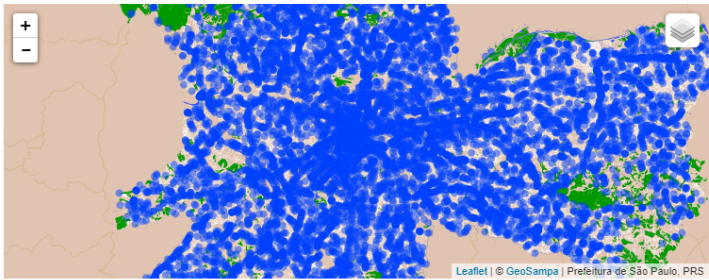


Powered by **prodem**



Pontos Críticos por Severidade

Análise & Filtro >



Incidentes: 2018

Exibir Tudo Incidentes >

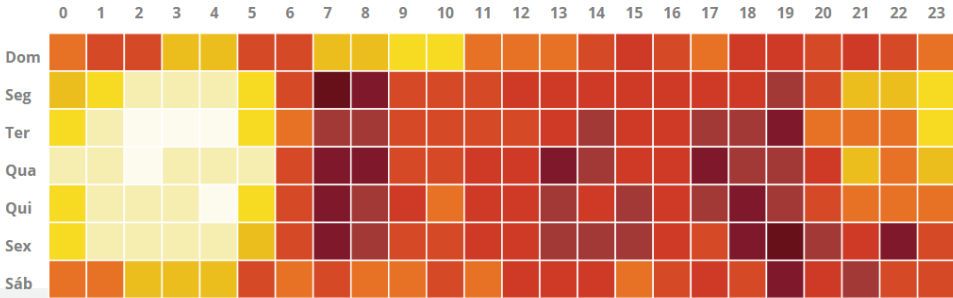
R\$526.820.085

Perda Economica Total e Mal Social: 2018

13105

Incidentes

2016 2017 **2018**



Filtros Salvos

Nenhum Filtro foi Salvo

DRIVER – How to locally adapt it?

Local adaption – github repository

The screenshot shows a web browser window displaying the GitHub repository page for 'WorldBank-Transport / DRIVER'. The browser's address bar shows the URL 'https://github.com/WorldBank-Transport/DRIVER'. The repository page includes navigation tabs for 'Code', 'Issues 29', 'Pull requests 2', 'Projects 0', 'Pulse', 'Graphs', and 'Settings'. The repository name 'WorldBank-Transport / DRIVER' is displayed at the top, along with statistics: 17 Unwatch, 10 Stars, and 11 Forks. Below this, the repository description 'DRIVER - Data for Road Incident Visualization, Evaluation, and Reporting' is shown with an 'Edit' button. A summary bar indicates 1,516 commits, 5 branches, 1 release, 16 contributors, and GPL-3.0 license. A 'Clone or download' button is visible. The commit history table is as follows:

| Commit | Description | Time |
|----------------|--|-----------------------------------|
| ddohler | Add API documentation | Latest commit 9774afd 26 days ago |
| .travis | Remove invalid docker tag option to fix deployment | 7 months ago |
| analysis_tasks | Create script to run through all blackspot phases | 11 months ago |
| app | Fix problem with multi-aggregation on boundaries | 3 months ago |
| deployment | Bump ansible-role-letsencrypt version | 5 months ago |
| doc | Add API documentation | 26 days ago |
| gradle | Bump schema builder library version. | 9 months ago |
| schema_editor | Pin angular version | 3 months ago |

Local adaption – draft TORs

Development

This section describes the competencies for a DRIVER developer.

Core competencies

- Proficient in a Linux environment, including shell scripting
- Knowledge of infrastructure tooling such as Vagrant, Ansible, and Docker
- Web development experience, specifically Python/Django and Javascript/Angular, including knowledge of HTML/CSS
- Experience with a relational database system

Preferred competencies

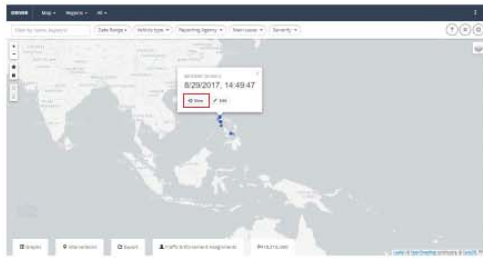
- Experience with:
 - PostgreSQL
 - Redis
 - Nginx
 - Gunicorn
 - Celery
- GIS experience, specifically using Windshaft
- Knowledge of statistics and R
- Knowledge of these additional technologies is also beneficial:
 - NFS
 - OAuth2
 - Javascript package/build tools (Grunt and Bower)
 - Monit
 - ufw

Local adaption - manuals

EDITING AND DELETING INCIDENTS

Analysts may also edit incidents already recorded in DRIVER. To edit an incident, go to the Map first, then click an individual incident you wish to edit by selecting one of the blue location pins.

Once selected, a pop up will appear that will prompt you to either view or edit an incident. Click "Edit".



The Incident Input form will appear again. You may edit details of the incident from here, and also delete them.

To save edited data, click the "Save Incident" button on the right.

To delete an incident, the click "Delete Incident" button on the right.

ENCODING INTERVENTIONS

Interventions are actions made by Analysts in order to alleviate a road incident. These may come in the form of disciplinary action, road safety precautions, etc.

To access add an Intervention, analysts must first go to the Map and click the "Intervention" tab found below.



Clicking on this will prompt the "Add Intervention" button to appear. Click this.

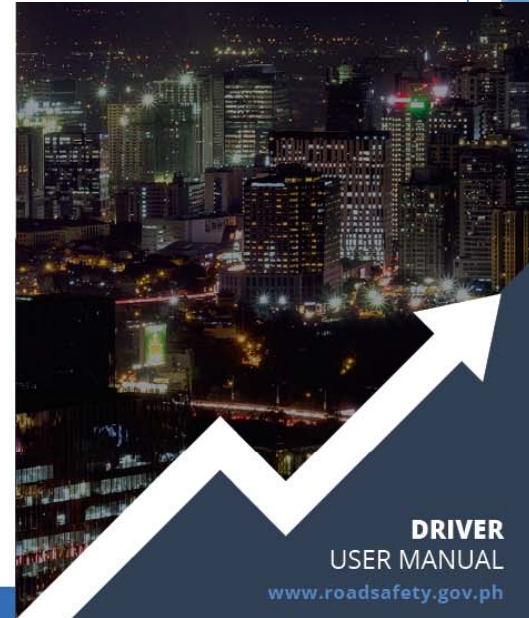


Intervention Input Form

- (A) **Intervention Location & Time**
Record location, time, etc. where the intervention took/ will take place.
- (B) **Intervention Detail**
The details and the action taken by officials to alleviate the road incident

Editing & Deleting Interventions

Just like editing incidents, click on a pinned intervention on the map. This will show an "Edit" button. You may edit and delete interventions in the same way.



DRIVER USER MANUAL

www.roadsafety.gov.ph

DRIVER is a web application aimed at improving road safety reporting and data analysis. It provides data entry tools, map interfaces, custom report and filter tools, multiple concurrent user editing, and data exports.

CONTACT US

DRIVER 0917-123-4567
Email: driver@driver.ph

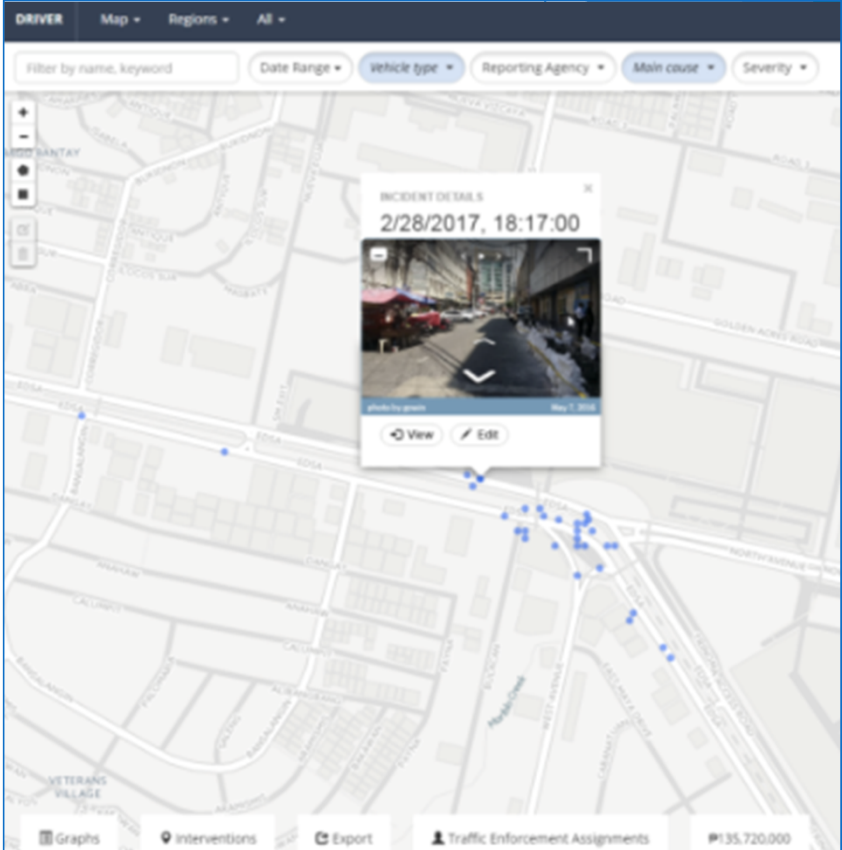
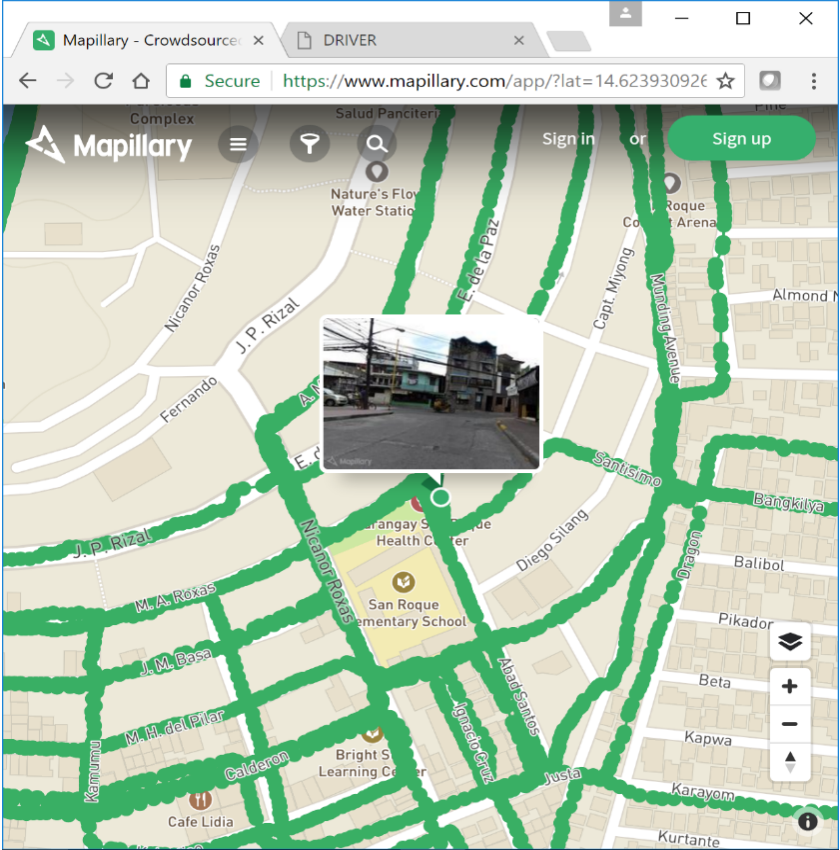
View the full DRIVER manual on
www.roadsafety.ph

Visit DRIVER on
www.roadsafety.gov.ph



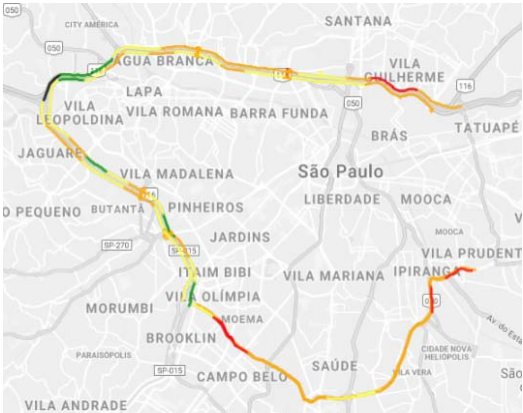
DRIVER – Next steps

Future development - Mapillary

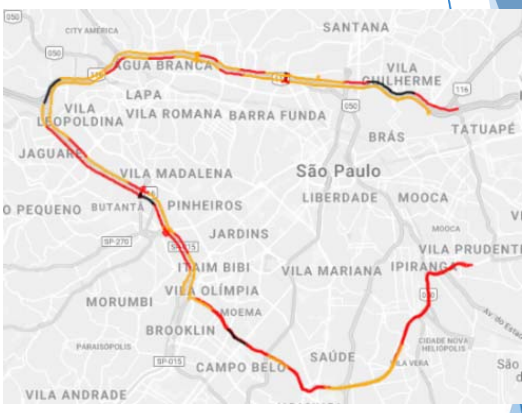


Future development - iRAP

Vehicle Occupants



Motorcyclists



Pedestrians



Bicyclists



iRAP's star rating gives a simple, objective measure of infrastructure safety for every road user type.


Future development – crash diagrams

100% 17:13

Pessoas envolvidas +

Pedro -

Partes amassadas



Dano

Pequeno

Médio

Grande

Fatores contribuintes da via / ambiente

Semáforo com defeito

80% 14:03

IAT

- Veículo
- Bicicleta
- Pedestre
- Barreira / Obstáculo
- Impacto
- Faixa de Pedestre
- Marca
- Trajeto aparente
- Mover mapa
- Editar veículos
- Encerrar
- Centralizar

Mapa

Itens

9 m

80% 14:04

IAT



Mapa

Itens

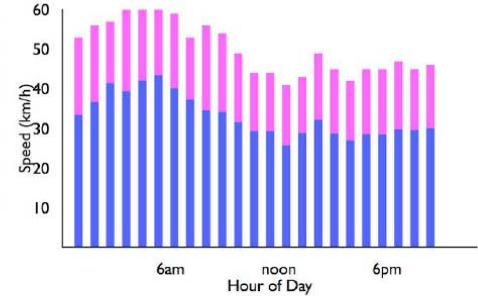
9 m

Future development – speed maps



Traffic Speeds Analysis

■ Average Speed ■ 85th Percentile Speed

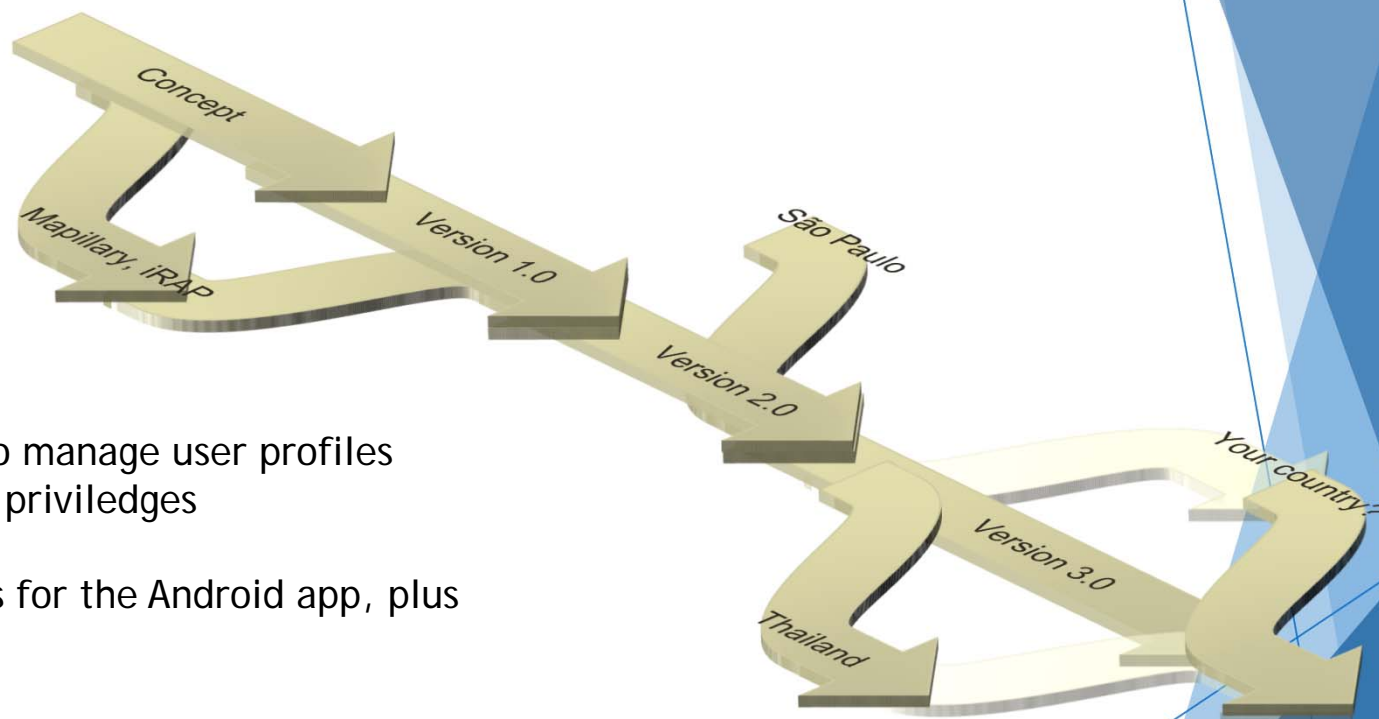


Average Speed:
32.6 km/h

85th Percentile Speed:
53.6 km/h

- Average Speed
- 0km/h
 - 5km/h
 - 10km/h
 - 15km/h
 - 25km/h
 - 35km/h
 - 45km/h
 - 55km/h

Future development



Different options to manage user profiles and administrative privileges

New functionalities for the Android app, plus an iOS app.

Logic checks when entering fields, and advanced management of external sources

Thank you!

Available for free on Bank's open-source code repository:

<https://github.com/WorldBank-Transport/DRIVER>

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