

# Mobileye™ Advanced API Integration

## Headway Warning Analysis

Label: mblyhdwrn - Mobileye™ Headway Warning

The **Headway Warning Analysis** looks at the incidents of Headway Warning events generated for a vehicle given a particular time frame. Using this data we can graph a tendency based on the number of incidents daily and hourly down to the very individual events that were generated, below is an example of the analysis using the Pegasus API.

### *Breakdown of the Request:*

Resource consumed: **rawdata** - analyze the events from May 1 till May 31 for vehicle ID: 617, we want the basic fields, including the count (which is the number of events generated), distance traveled, and ignition ON time. We are applying a filter of **labels** with **mblyhdwrn** (this label indicates that the event generated is a **Mobileye™ Headway Warning Event**). We are applying a resample, so we are looking at time chunks of the data, the frequency of the chunks is 1D or 1 Day (Daily) and we are doing a sum of the count, the difference of the distance traveled, and the difference of the ignition on time.

### *Summary of the Request:*

Know the amount of headway warning events generated daily for this vehicle ID: 617 and include the distance traveled and ignition time.

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblyhdwrn&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition%20time%20minutes:@dev%20ign.round(2)&labels=mblyhdwrn&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition%20time%20minutes:diff)

### **Result:**

```
{
  "count": 2,
  "ignition_time_minutes": 13.52,
  "distance_traveled_mile": 5.59,
  "event_time": "2016-05-02T00:00:00"
}
```

This means there were 2 headway warnings generated on the 2nd of May (2016-05-02) and a distance of 5.59 miles, and 13.52 minutes with the ignition ON.

```
{
  "count": 25,
  "ignition_time_minutes": 44.48,
  "distance_traveled_mile": 23.59,
  "event_time": "2016-05-29T00:00:00"
}
```

This means there were 25 headway warnings generated on the 29th of May (2016-05-29), that day the vehicle traveled 44.48 minutes, for a distance of 23.59 miles.

Further analyzing this we can generate an hourly request, to tell us how many events generated every hour that day (notice how we updated the freq to 1H for 1 Hour [[&freq=1H](#)])

```
https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-29T00:00:00&to=2016-05-29T23:59:59&fields=\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblyhdwrn&distance=mile&time=minute&resample=event time&freq=1H&how=count:sum,distance traveled mile:diff,ignition time minutes:diff
```

```
[
  {
    "count": 5,
    "ignition_time_minutes": 2.53,
    "distance_traveled_mile": 2.84,
    "event_time": "2016-05-29T18:00:00"
  },
  {
    "count": 18,
    "ignition_time_minutes": 20.32,
    "distance_traveled_mile": 14.78,
    "event_time": "2016-05-29T19:00:00"
  }
]
```

We can see that a majority of the events generated at 2016-05-29T19:00:00

We can analyze this down to the individual events to see all the Headway Warning alerts

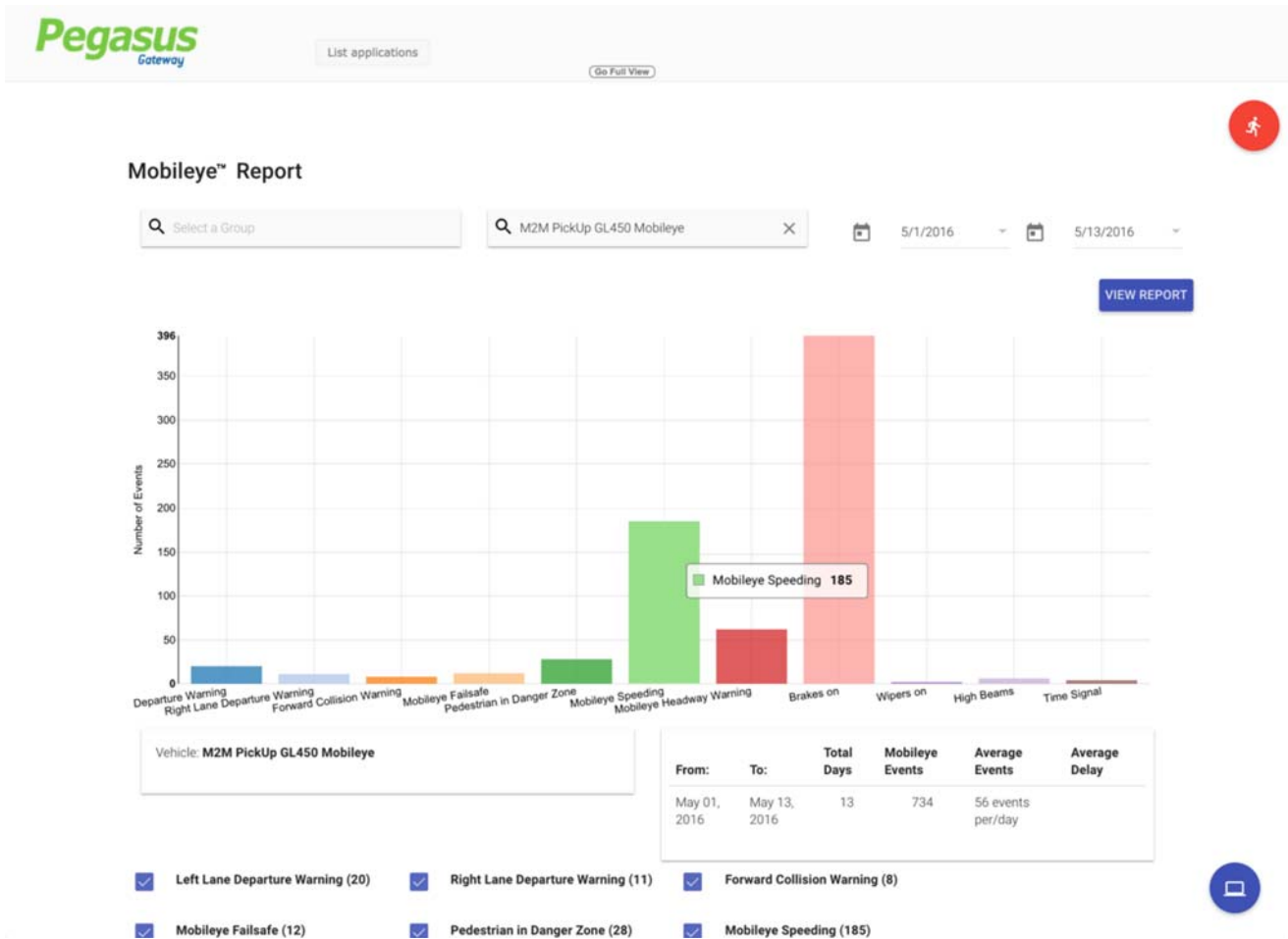
For this we don't need a resample, because we don't want to break it down into time chunks, we just need the events, or rawdata generated, in other words all 18 events (count) from above.

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-29T19:00:00&to=2016-05-29T19:59:59&fields=\\$basic,count:1,odometer:@dev\\_dist,hourmeter:@dev\\_ign&labels=mblyhdwrn&distance=mile&time=minute](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-29T19:00:00&to=2016-05-29T19:59:59&fields=$basic,count:1,odometer:@dev_dist,hourmeter:@dev_ign&labels=mblyhdwrn&distance=mile&time=minute)

The same procedure done above can be repeated for the following analysis, The only thing that changes in the request is the event label that we are analyzing. Here are more analysis done with the Mobileye™.

## Example Application in [Pegasus Gateway](#)

This is an example application built using the data from the [API](#).



You will notice there is a count of all the possible Mobileye™ events.  
And the details of each event

- Left Lane Departure Warning (8)       Right Lane Departure Warning (5)       Pedestrian in Danger Zone (4)
- Mobileye Speeding (55)       Mobileye Headway Warning (33)       Wipers on (1)

Vehicle	Event Time	Heading	Location	Speed	Event	Valid Position
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:10:28	SE (141°)	(US - Florida)(Brickell, Miami) Rickenbacker Causeway, Miami (US) ~~~	17 mph	Mobileye Speeding	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:11:36	NE (85°)	(US - Florida) Rickenbacker Causeway, Miami (US) ~~~	48 mph	Mobileye Headway Warning	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:11:36	NE (85°)	(US - Florida) Rickenbacker Causeway, Miami (US) ~~~	48 mph	Left Lane Departure Warning	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:12:16	E (90°)	(US - Florida) Rickenbacker Causeway, Miami (US) ~~~	42 mph	Mobileye Speeding	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:12:17	NE (89°)	(US - Florida) Rickenbacker Causeway, Miami (US) ~~~	42 mph	Mobileye Headway Warning	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:12:54	E (126°)	(US - Florida) Rickenbacker Causeway, Miami (US) ~~~	53 mph	Left Lane Departure Warning	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:14:08	SE (135°)	(US - Florida) Rickenbacker Causeway - Sewage Plant Road, Miami (US) ~	36 mph	Mobileye Speeding	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:15:35	E (134°)	(US - Florida) Rickenbacker Causeway, Homestead ~~~	46 mph	Left Lane Departure Warning	true
M2M Pickup GL450 Mobileye	Jun 02, 2016 07:15:35	NE (78°)	(US - Florida) Harbor Drive - Fernwood Road, Homestead 33149	0 mph	Pedestrian in Danger Zone	true

## Left & Right Lane Departure Warning Analysis

Label: mblyldw - Mobileye™ Left Lane Departure Warning  
Label: mblyrldw - Mobileye™ Right Lane Departure Warning

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblyldw,mblyrldw&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition%20time%20minutes:@dev%20ign.round(2)&labels=mblyldw,mblyrldw&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition%20time%20minutes:diff)

## Pedestrian Alertness

Label: mblypdfcw - Mobileye™ Pedestrian Forward Collision Warning

Label: mblypddng - Mobileye™ Pedestrian in Danger Zone

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblylldw,mblyrldw&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition%20time%20minutes:@dev%20ign.round(2)&labels=mblylldw,mblyrldw&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition%20time%20minutes:diff)

## Imminent Crash Risk Analysis

Label: mblyfcw - Mobileye™ Forward Collision Warning

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblyfcw&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition%20time%20minutes:@dev%20ign.round(2)&labels=mblyfcw&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition%20time%20minutes:diff)

## Detailed Speeding Analysis

Label: mblyspd - Mobileye™ Speeding

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition time minutes:@dev ign.round\(2\)&labels=mblyspd&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition%20time%20minutes:@dev%20ign.round(2)&labels=mblyspd&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition%20time%20minutes:diff)

## Aggressive Behavior Analysis

Label: mblylftsig, mblyrghsig, agglnchnng, aggdrvcrv

There is even the possibility of integrating Syrus signals such as the aggressive lane change, and aggressive driving on curve events, with the Mobileye™ Left and Right turn signals. Here we can analyze if the driver is an even greater risk because he's making aggressive lane changes on the road and not even using his/her turning signals.

[https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=\\$basic,count:1,distance traveled mile:@dev dist.round\(2\),ignition\\_time minutes:@dev ign.round\(2\)&labels=mblylftsig,mblyrghsig,agglnchnng,aggdrvcrv&distance=mile&time=minute&resample=event time&freq=1D&how=count:sum,distance traveled mile:diff,ignition time minutes:diff](https://pegasus1.pegasusgateway.com/api/rawdata?vehicles=617&from=2016-05-01&to=2016-05-31&fields=$basic,count:1,distance%20traveled%20mile:@dev%20dist.round(2),ignition_time_minutes:@dev%20ign.round(2)&labels=mblylftsig,mblyrghsig,agglnchnng,aggdrvcrv&distance=mile&time=minute&resample=event%20time&freq=1D&how=count:sum,distance%20traveled%20mile:diff,ignition_time_minutes:diff)

- **Mobileye™** is trademarked & registered in the US Patent and Trademark Office.