

SV-PLUS - Minimize Incidences of Drive-off Fuel Theft at Petrol Stations in New Zealand



In New Zealand, petrol stations each year lose tens of millions of dollars to drive-off fuel thefts. To assist petrol companies fight these thefts, SAINS has implemented the SmartVeillance Profile and License plate Unified System (SV-PLUS). The solution pairs high definition cameras with intelligent license recognition software to alert petrol stations whenever a suspected vehicle of interest (VOI) pulls in at a pump.

Mr Sanjai Bagia is one of the co-owners and the Operations Director of Petrochem Group that owns more than 17 Caltex petrol stations throughout New Zealand. His stations have been using SmartVeillance Video Analytics Surveillance Solution since the beginning of 2014 to combat petrol station fuel theft and, at the same time, use the data analytics to better serve their customers. We recently sat down with him to find out his views on the solution.



License Plate Recognition engine captures license plates of vehicles at petrol pumps

Interview with New Zealand Petrochem Group – Operator of Caltex Petrol Stations

“This is a powerful tool. The more we share VOI data between the business communities and the police, the more beneficial it is to everyone. It can benefit the community as a whole as it has the ripple effect of reducing the crime rate”

Mr Sanjai Bagia, Co-Owners and Operations Director of Petrochem Group

Can you tell us why you decided to install the SmartVeillance License Plate Recognition Solution at your stations?

At our stations and in fact I'd say in all stations, fuel thefts in the form of drive-offs and failure-to-pay are a big problem. With the constant fluctuations in petrol price over the years, the problem has only gotten worse. In addition, the margins on petrol are actually very thin, one drive off can cost us something like 200 additional sales at the pump to recoup so this is a big problem for us. We decided to implement the system to try to reduce drive-offs.

If drive-offs are such a big problem why keep allowing customers to pump before paying? Why not for instance implement pay at pump?

Like I mentioned, margins on petrol are very thin. We actually make most of our revenue from the convenience store attached to the station. To get more sales, we encourage customers to come into the store to pay as this might result in an impulse purchase.

How has this solution helped you reduce fuel theft at your petrol stations?

The SmartVeillance system provides a live view of each pump, reads, time stamps and stores the license plates of all vehicles. Whenever a VOI is detected, the SmartVeillance system gives an alert. (This is after checking the license plate in the watch list database). Our staff at the payment counter can prevent the pump from been used or ask the customer to come into the store to pay first before releasing the pump handle.

Where do the number plates on the watch list come from?

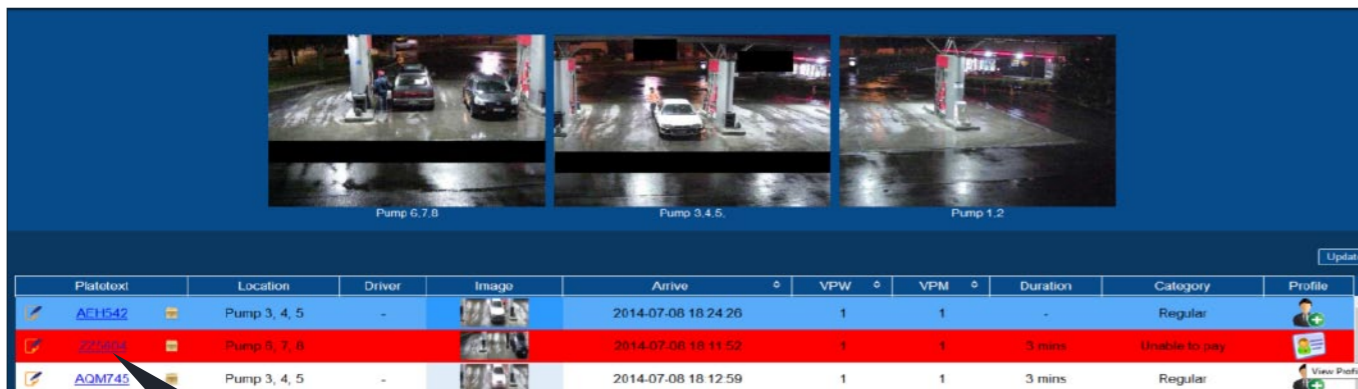
The system enables VOI to be stored and shared by all the stations that are using this system. The number plates come from 3 sources:

1. from individual petrol stations
2. from other petrol stations with whom we share our database
3. from the NZ Police database.

The numbers from the NZ Police database lists not only drive off cases but also stolen and wanted vehicles, etc. All in all, we have more than 1,000 vehicles on the list, which is stored locally at the stations, as well as on the cloud server.

How do you compare SmartVeillance LPR solution with the purely spread sheet sharing method previously that allow stations and police to share information on Vehicles of Interest (VOI)?

I don't think you can really compare them. Even when you have VOI listed on a spread sheet (either hard copy or softcopy), with over a thousand numbers, no ordinary person can remember all of them or is manually able to identify them fast enough. SmartVeillance LPR System is able to automatically sort through the list within seconds and identify VOI whenever the vehicle is still at the pump. So, I think a spread sheet solution is somewhat limited when the list of vehicles gets longer.



Operator enters vehicle profile as Blacklisted. SV-PLuS will alert operator with alarm sound when blacklisted vehicle arrives at the connected petrol station



Has SmartVeillance benefited your Caltex Petrol Stations in other ways since you started using it in early 2014?

Yes, absolutely. Not only does it reduce the number of fuel thefts, but it has also brought about a whole new level in management, especially from our staff members who are now able to have confidence doing multiple jobs knowing that if a VOI is detected there will be a sound alert.

This system has an added advantage in that it provides another platform for us to serve our customers better by white list profiling.

Can you explain what you mean by that? That you are able to serve your customer better by white list profiling?

Well, this system has a feature which allows you to profile regular customers. With this profile we are able to focus on and anticipate the needs of our regular customers. For example, if we know that a customer always orders a coffee when he comes in for refuelling, we can get the coffee ready for him so that by the time he comes in to pay, we will have it ready and waiting. With this system, we are able to prioritise better customer service by being proactive.

So you are able to tailor your service to your customers' needs through this solution.

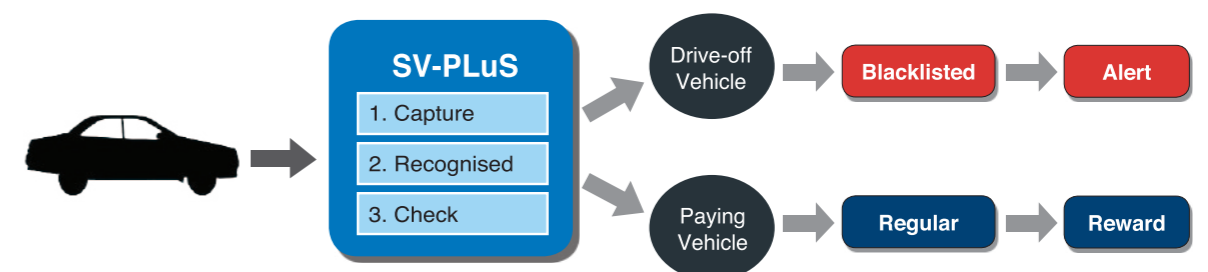
Yes, we are able to greet them by their names even when different staff are on duty as we have their profile. This of course makes our customers happier as they are being cared for and encourages them to return. So yes, this system can do a lot more as a result of data analytics.

To sum up, what would you like to say to those reading this interview?

This system has reduced the number of drive-offs, and this has resulted in less loss incidents at our stations.

This is a powerful tool. The more we share VOI data between the business communities and the police, the more beneficial it is to everyone. It can benefit the community as a whole as it has the ripple effect of reducing the crime rate.

SV-PLuS Detection Overview



Interview with New Zealand Caltex Station Manager from Western Springs

We are one of the stations with the minimum number of incidents within our area. We were approached by police to find out how we manage our station. This system is the key difference between us and other stations.

Syed Hossain, Manager of Caltex Western Springs



Can you tell us a little bit about yourself?

My name is Syed Hossain, I'm the station manager at the Caltex Western Springs Station in Auckland.

We understand your station has been equipped with the SmartVeillance License Plate Recognition (SVLRP) System, can you tell us how this has helped you and your station?

The system has been a huge help in reducing the number of drive offs and unable to pay customer and in identifying suspected Vehicles of Interest (VOI) whenever they pull into our re-fuelling pump. This system has built very high confidence in our staff managing the counter as the system is reliable and has a fast response time.

In fact, we are one of the stations with the fewest number of incidents within our area. We were even approached by the police to find out how we manage our station. I can honestly say this system is the key difference between us and other stations.

Can you briefly explain how the SV LPR System works?

It's very simple, this system is designed to detect and alert staff of any vehicle that comes into our station with a number plate that matches our list of Drive off Vehicles, Unable to Pay Vehicles and Vehicles of Interest (VOI).

What do you mean by VOI or Vehicle of Interest?

Well, VOI stands for Vehicle of Interest. When we use this term, we are actually referring to a combined list of Customer on Watch (COW) vehicles and Police Stolen Vehicles (PSV).

How many VOI do you have in your system?

There are currently more than a thousand of them in the system. In addition to VOI we pick up from our own station, we also get VOI from other stations using the system and VOI sourced from the NZ police database.

Can you tell us a bit more about the system? What are your favourite features?

One of the best things about this system is that it gives an Event Alert and Sound Alert whenever a VOI is detected. This really improves our overall daily operations as we can now concentrate on other jobs while knowing that if a VOI is detected we will be alerted.

The system also enables VOI to be created and shared by all the stations that are using this system. This information sharing empowers the system and allows it to be more powerful and productive within all stations.

What is the difference between then and now? I mean before you had this SV LPR System?

Before we had this SV LPR System, we had a hardcopy list of plate numbers which we had to refer to whenever a car pulled into the station. This manual work was very taxing and inefficient. It took a lot of concentration and wasted so much time, and in the end many VOI still slipped through. It's hard to remember even a list of 10 number plates, what more a hundred of them. It just didn't work. Even if a car that pulled up matched the list, we wouldn't know because we were often too occupied with other tasks at the same time.

Ever since we started using this SV LPR System, our work goes a lot more smoothly. We can multitask knowing our system is performing for us. We are really pleased to be using this system.

In a sentence or two, what would you say about this system?

SV LPR is an excellent system that I would recommend to all petrol station managers. Get it because there are so many benefits to using it.

For related article – refer to earlier issue of Jendela 1-2014, page 20 - License Plate Recognition Solution for New Zealand Petrol Stations.

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