

## **Customer service transformed using innovative video technology from waste collection vehicles**

**P Tatterson**<sup>1</sup>, M Schoemaker<sup>2</sup>

<sup>1</sup> Yarra Ranges Council, Lilydale, Victoria

<sup>2</sup> JJ Richards & Sons Pty Ltd, Cleveland, Queensland

J.J. Richards and Sons have always been innovators in the area of waste collection technology and practices, a tradition that continued with the introduction of their j-Track® onboard operational data and telemetry system in the late 90's. j-Track® has continued to evolve in functionality through JJR's ongoing investment in improving the technology, to the point where the available computing and camera solutions in the market were no-longer suitable to their requirements and they needed to consider designing their own.

This drove JJR's decision to invest in developing their own advanced onboard computer and vision system which incorporates 360 degree video capture, partnering with Black Moth Technologies to develop the Black Moth Vision System – a combination of powerful computing with rugged wide-angle cameras mounted around the vehicle. These cameras, apart from providing unparalleled vision and safety benefits to drivers, are also constantly recording for incident investigation purposes.

Yarra Ranges Council is a progressive council striving for continuous improvement and innovation opportunities.

Staff from Yarra Ranges Council have routinely sought assistance from the team at JJ Richards when customer service issues have arisen in relation to missed bin collections and alleged damage caused by waste vehicles. The availability of on-board video technology has been effective in identifying a response to these requests. Meanwhile, local authorities are also struggling with the growing burden of monitoring and maintaining an increasingly complex network of roads and associated infrastructure, and finding ways to reduce costs while doing-so.

Since Yarra Ranges Council had been benefiting from the advanced recorded vision capabilities of the Black Moth computing and camera systems that were fitted to JJR's domestic waste collection vehicles for some time, they realised that they could leverage that footage to their advantage in areas other than for waste collection activities. JJR's trucks were covering nearly all of the road network within Yarra's LGA, and were doing this on a weekly basis. This provided footage that was current, unlike the majority of the footage provided by alternative market technologies widely used by Councils currently.

With Yarra Ranges covering an area of 2500 square km, any efficiencies that can be achieved with site visits are welcomed. After Council's waste service team

recognised the potential value that could be gained via access to JJR's recorded footage, Council approached JJR with this idea.

JJR appreciated the value of this suggestion and thus, the j-Track® Council Video Portal was born. This allows Council to access footage from the vehicles in a very cost-effective manner, and therefore reduce the time, cost and manpower involved in field inspection activities. In many cases, Council can now avoid sending an officer to investigate a situation, and can instead retrieve footage from the recent passage of one of the J.J Richards vehicles.

Yarra Ranges now have access to the JJ Richards video portal. Whilst staff initially will endeavour to utilise Google Street View, if up-to-date imagery is required then the JJ Richards portal provides a cost-efficient virtual site visit.

This however is only just the beginning; with JJ Richards and Black Moth working with industry partners to develop issue-identification technology which will allow for scanning of video imagery to identify changes and issues in the streetscape through machine learning technology. Council's vision for this innovation is to achieve exception reporting that provides information on issues such as potholes in road pavements, fallen trees or branches, damaged roadside infrastructure, contractors working in the road space and many other possibilities.

JJR has enjoyed working with Yarra Ranges Council on this project, and welcomes this opportunity to leverage their heavy investment in vehicle computing technology; providing a new and innovative way for Council to reduce their costs and provided further benefits to their residents.