

Dynamic Transport Optimisation - Royal Flying Doctor Service Victoria

Background

Royal Flying Doctor Service (RFDS) operate a fleet of ambulances across Victoria. These are primarily for non-emergency transport; patients that require specialist equipment or medically trained staff during their journey, typically to and from appointments or outpatient care. Only about 50% of transport tasks (jobs) are known at the beginning of the day, with the rest being booked on the day. RFDS have a combined call centre and dispatch operation (control centre) that interacts with customers and crew to manage the operation. Drivers have a GPS enabled electronic device for two-way communication with the dispatch centre. New jobs can be notified, and completion of jobs can be registered.

The problem is quite complex as different levels of patient care are required, needing different crews, and there are many special circumstances to be dealt with.

RFDS was interested in providing additional decision support capability to increase efficiency and improve customer service. Opturion was chosen, partly due to its ability to integrate with the existing booking and dispatch system, thereby minimising cost and change management.

The Solution

The Opturion solution has two main functions:

Booking Jobs

As new bookings arrive, the control centre must decide whether the job can be serviced. The optimiser looks across the entire fleet and identifies which ambulances, if any, could service the job without impacting any jobs already booked. This task is completed in less than 60 seconds.

For each ambulance that could do the job, the arrival time, travel time and travel distance are displayed.



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This enables the control centre to choose the best option to meet the requested time or negotiate with the customer a new time if no ambulance can make the requested time or if it would involve excessive additional travel.

Optimising the Fleet

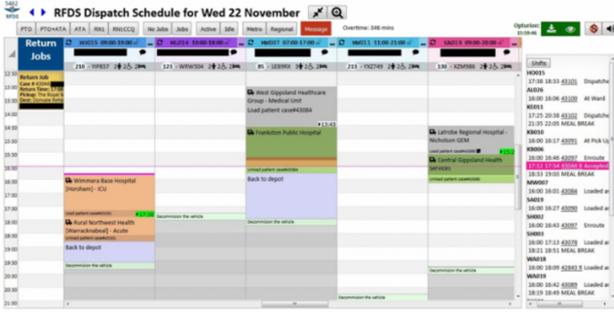
Throughout the day, the system optimises and re-optimises the routes and schedules for the ambulances to take account of:

- New jobs coming in
- Traffic delays
- Actual travel times and job completion time
- Driver meal breaks
- Fleet dispersal

As with the booking process, the optimiser provides new routes and schedules on the screen with the final decision made by the controller. Whilst complete automation is possible, RFDS decided that this was the most appropriate for their circumstances.

At the end of the day, the system ensures that the ambulances are in a position to return to base on time.





At the request of RFDS, Opturion carried out a benefits assessment. This was rather complicated by changes in the business soon after go-live, but based on the data available the main conclusions were:

- Productivity increased by about 9%
- Late arrivals (for all jobs) reduced by about 8%
- Late arrivals (for jobs booked on the day) reduced by about 25%

Booking System

RFDS have their own booking system (Traeger) and using Opturion, there was no need to replace it, which would have been disruptive, costly, and potentially risky, and require change management. Opturion runs in the cloud and uses a web service to communicate with Traeger.

Customer Outcomes

The system went live in September 2017 with the booking application, with complete optimisation in 2018. Change management and risk were significantly reduced as the existing booking system was retained with minimal changes. All that was required was a new button to run the optimiser and an icon to show when it was completed.

Notwithstanding the potentially inaccuracies due to changes in the business, it fair to say that productivity increased, and customer service improved, particularly for jobs booked on the day.

Further Information

Please contact Opturion for a demonstration, or give us some data that we can use to identify potential benefits.