Case Study
KM2ME Mobile Application

Whether its fresh produce, grain, coal or construction materials, moving goods across our vast country is no easy feat.

However, Australia's growing population and expanding economy demand it. The Australian Rail Track Corporation (ARTC) strive to improve safety, reliability and transit times, and capacity for the interstate freight and passenger rail markets.

ARTC is responsible for managing a large proportion of Australia's national interstate rail network. In fact, the government-owned corporation looks after more than 8500 route kilometres of interstate track across five states.

The Australian Rail Track Corporation consulted Spatial Vision to produce a new and improved kilometrage application, KM2ME to support asset management and worker safety.
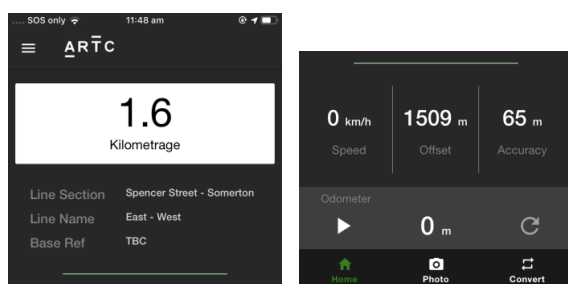
"The team of developers at Spatial Vision delivered a modern, functional and successful mobile app that has bridged the gap between the office and field staff increasing work efficiency."

Matthew Brodie
GIS Specialist, Australia Rail Track Corporation

Customer Profile
www.artc.com.au

Company
The Australian Rail Track Corporation

Location
SA

Industry
Transport & Infrastructure

Products
KM2ME Mobile Application

Solution
Spatial Vision developed a new, user-friendly mobile application KM2ME to support ARTC staff in managing maintenance activities across the rail network. The GPS-based solution is embedded with up-to-date data references to assist users in accurately locating their position along the rail network, and allows users to track and record maintenance works at their precise location.

Benefits
- Assists in promoting proactive maintenance logging
- Enables accurate line and track position references to be quickly generated

Image courtesy of ARTC

The Issue

Every year ARTC undertakes millions of dollars' worth of rail maintenance across Australia, including track repairs and reconditioning. This work is critical to ensuring that the tracks are safe and reliable for the hundreds of trains using the network every day.

To understand where maintenance needs to occur, the ARTC uses a kilometre referencing system that relies on physical posts in the ground every kilometre that are uniquely numbered. The post locations are mapped and the numbers used to identify locations of assets on the rail network. One of the issues the ARTC faced was that these posts are not accurately spaced therefore making it a challenging task to precisely locate these posts. To resolve this issue, Spatial Vision were engaged to create an application that accurately displays post positions and allows users to easily locate their position on the tracks. The new app was to be designed to assist maintenance personnel in managing and undertaking works more effectively.

The Solution

KM2ME is an application that calculates a user's current corridor location as a kilometrage reference based on their GPS location.

The newly developed application for iOS consolidates vast amounts of data including updated reference data into a scalable, modern and user-friendly view that enables users to quickly and efficiently locate themselves in relation to the kilometrage posts mapped along the network. Information about tracks nearby including nearby kilometrage posts can be gained through the app, with GPS location updating every ten seconds for precise positioning.

The app also allows users to capture and tag photos with location information including GPS references and kilometrage information, and measure the distance travelled. This information can then be sent back to the office via the app to assist with logging and determining future maintenance. Longitude and latitude coordinates can also be viewed and recorded for organisations such as emergency services to locate users.

Adopting agile methodologies, the Spatial Vision team worked closely with the ARTC at every stage to build and adapt the solution to fit their requirements. In the process, the team underwent significant research and development to create a solution that would efficiently bring together the large quantities of data into a high-speed application.

UN Sustainable Development Goals in Focus

The KM2ME application supports Goal 9: Industry, Innovation and Infrastructure, and Goal 11: Sustainable Cities and Communities, contributing to the development of "quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being" (Target 9.1) and enabling "access to safe, affordable, accessible and sustainable transport systems for all, improving road safety" (Target 11.2).

For more information on the Sustainable Development Goal Targets and Indicators, visit: sustainabledevelopment.un.org

The Benefits

Benefits of the mobile application include the following;

- ✓ Assists in promoting proactive maintenance logging
- ✓ Enables accurate spatial and GPS data references to be quickly generated
- ✓ Customised solution with ongoing support providing scope for future updates and developments

Our mobile application enables rail maintenance personnel to identify and monitor maintenance work locations quickly and efficiently. If you'd like to know more, please get in touch.

Spatial Vision