# Software Projects

Due to the commercial-in-confidence and sensitive classification of the software, no source code is available for public viewing.

## Air Defence Training Software (2022)

I support and enhance the Air Defence Training system using C++, C#, Javascript, PHP, and Unix shell scripts. The system allows the trainees to practise using the air defence system by creating immersive battle scenarios in various terrains and weather conditions.

## New ERP Deployment (2010)

I developed the deployment strategy to run the new ERP graphical user interface on Windows. The software development team designed the GUI for Linux. The deployment strategy involves installing the X server on the local Windows desktop and creating a script to start up the GUI using remote X. The company can use existing hardware for the new ERP, speeding up the development and deployment time while limiting cost.

## ERP Systems Integrator (2010)

The ERP Systems Integrator allows live data exchange between the legacy ERP and the in-development ERP system. So, operations can be "business as usual", and users can create, update and query for the information seamlessly.

The Integrator was developed on Windows and ran on Linux. The Integrator uses Pentaho Data Integration to develop ETL data pipelines between Ingres DBMS and PostgreSQL DBMS.

## New Proof of Delivery Document Imaging System (2009)

The new Document Imaging System replaced the legacy imaging system, which ran on Windows 95 and used Powerbuilder. The new system can run on the Allied Express network or remote sites.

The system automatically scans the documents, allowing the operator to manually index documents without barcodes. Compared to the old system, this reduced processing time by more than 70%.

The imaged documents get sent to the SFTP server when an internet connection becomes available.

The new Document Imaging System ran on Ubuntu Linux. It was written in C++ and can utilise any locally connected image scanners.

## Live Vehicle Tracking (2008) – The First in Australia

The Live Vehicle Tracking system allows operators to track the travelled path and current position on the map for all the vehicles in the fleet in all states. The system also allows customers to view the position of their parcels while in transit.

The system used PHP for server-side rendering and JavaScript for frontend rendering. It integrates with OpenStreetMap.org to display the map and uses Pentaho Data Integration to create an ETL data pipeline for the GPS information from Microsoft SQL Server.

## Scan To Revenue System (2008)

The Scan-To-Revenue System cleans the parcel tracking and proof of delivery data to automatically capture lost revenue for the overnight freight business unit. The system utilises Pentaho Data Integration to create an ETL data pipeline that cleans the source data, searches for customers and allocates charges to them. The system recovered $2 million annually in lost revenue due to human and customer system errors.

## Automatic Service and Network Monitor System (2007)

I deployed Nagios, an Open-Source monitor system, to more than 60 network nodes on the company's network.

The system ran on Linux. Instead of relying on third-party services, it utilised a simple 2G mobile phone locally connected to send SMS alerts.

I developed many bespoke scripts and plugins, using Unix shell scripts, C, and C#, to provide stats for the in-house-developed services.

## Migration of the Electronic Freight Delivery Booking System (2003)

I ported the Electronic Freight Delivery Booking System to Solaris. The migration moved all the data structures from the in-house developed library to Glibc.

The migration should include expansion of the type of deliveries for all business units.

## Collins Class Submarine Combat System Training Software (2002)

The Combat System Training Software allows trainees to navigate the combat system on the Multi-Function Combat Console (MFCC) while onshore. So, fast pace the training and reduce cost.

The training software used C++ and Microsoft Foundation Class on Windows 95 and 98.

## Hard Disk Cloning Software (2001)

The Hard Disk Cloning Software allows the operator to clone hard disks over the network. The utility ran on Solaris on top of the Collins Class submarine combat system. Therefore, the cloning can be run during servicing and operation, reducing the downtime of a computer node on the Collins class submarines.

I wrote the utility in Ada.

## Parcel Tracking System: Australia's first real-time parcel tracking system (1999).

The Parcel Tracking System consists of multiple deployed components:

Docking Station – A Windows-based desktop application that allows barcode scanners, Symbol PDT-3000, to dock and download scanned records via serial communication. The application enables the site supervisor to search for tracked parcels. The application transfers the data via FTP to the central repository for processing.

The application ran on Windows 95/Windows 98, using Powerbuilder.

Scan Processor – A Unix daemon retrieves the scan data from the FTP server, cleans it, and matches it with the master record.

The processor ran on AIX Unix. I developed the processor in embedded SQL C.

## Electronic Freight Delivery Booking System: Australia's first freight booking via EDI (1997)

The Electronic Freight Delivery Booking System retrieves EDI data from the customer's system on the FTP server and books the deliveries. The process includes charging, dispatching to the local depot, and allocating drivers.

The system ran on AIX Unix. I developed the system using embedded SQL C.