

## Summary – per email to Fiona Meehan

After speaking with Michael last Monday, we agreed I would respond to the Software Engineering Challenge.

Here is a summary of my response

First, I looked at the problems and decided to work on the Vehicle Survey problem because it presented an interesting, and useful, real-world problem.

I set up a GitHub project <https://github.com/delsmith/Traffic-Survey-Development.git>

where you can find the artefacts of my software engineering effort.

Because my time is short, I concentrated my design efforts on finding a robust, efficient algorithm for importing the raw data.

I settled on an event-driven algorithm, which can be implemented reasonably simply in a variety of programming languages (Java, javascript, C, C++, perl, python, erlang - to name a few)

After some consideration I chose to implement a Finite State Machine model, a favoured choice for real-time event handling.

I undertook to validate the algorithm using Python in the ECLIPSE PyDev development framework.

Python supports an elegant technique for implementing an FSM.

The resulting ECLIPSE project, 'TrafficSurvey' has been committed to GitHub.

The script 'DataImport.py' can be executed from a BASH shell or executed from the MacOSX Finder using 'Python Launcher App'

For expediency, it is hard-coded to process a file called 'test-data.txt' and generate a CSV file called 'test-results.csv' (in the same directory as the executable)

It is a prototype, not production-ready, but processes the test-data in a fraction of a second.

It could have generated an SQL script or using an ODBC connection, directly populated a database table.

In my experience, decoding the raw data is the challenging part of this product.

With the information in a database, all the reporting requirements can be realised using relatively straightforward queries or reporting tools

If Aconex is genuinely interested in hiring talented software engineers to develop innovative, reliable products, I would be very interested in meeting you.

By the way, I intend to ask Richard Andrews for a reference as he has had recent experience of giving me difficult problems to implement in one of the most difficult languages - Erlang. I see from LinkedIn that Richard is known to Michael Collas and I would be very happy for Michael to contact him informally or formally.

I am pleased that Richard has posted a recommendation for me on LinkedIn.