

From: [REDACTED]
To: [Northampton Gateway](#)
Subject: PINS case number TR050006 Registration Identification number 20011413
Date: 29 November 2018 19:50:46

REPLY TO RR-742 – Roxhill Doc 8.3

I am very pleased to see a response to my comments RR-742 concerning limitation in the traffic simulation model used by Roxhill for modelling of the proposed traffic layout of Junction 15 of the M1 motorway in Northampton.

My original comments were based on my observations of demonstrations of the traffic movements around junction 15 where I observed graphical displays showing vehicles (and a bicycle) sharing the same physical space.

The reply attempts to trivialise these conditions to be purely '**graphical errors**' with no significance and the '**complex algorithms**' could not possibly be in error by stating "The visualisations on display were therefore based on accurate VISSIM modelling.

I am not doubting the visualisations are themselves not an accurate presentation of the output of the simulation, what I am suggesting is that the fidelity of the simulation is itself limited and hence the resulting computation has limitations.

The Applicant's reply Quotes "**However, the positions of the vehicles are taken from the modelling software where this issue does not normally occur**" – so it does occur sometimes,

I suggest these occurrences are what I observed, hence the limitations of the algorithms and fallibility of methodology or its operation.

Computer simulations are a useful tool if used with caution and not blind faith. I am not sure who takes ultimate responsibility for the fidelity of the simulations used to predict the influence of traffic flow changes due to a new road layout.

But the reply I see to RR reference -742 has the catchall statement,

"The final VISSIM model was reviewed and approved by Highways England and Northamptonshire County Council Highways"

If this is trying to say "**All is well and above reproach.**" I disagree.

Before you dismiss my comments as disgruntled ramblings of a 'NIMBY' resident I would like you to consider that I have used computer simulations to predict the configurations and optimisation of race winning Formula One cars over many years, with some of the best drivers, where the computational power was always never enough to get everything right and there was always something to learn.

Humility in post race debriefs was sometimes the order of the day on all sides.

Dr John P Davis

A bit of background

My Doctorate was in the Study of the Aerodynamics of Ground Effect in Race and Road cars. It involved some of the initial correlation work conducted on what is now called CFD or Computational Fluid Dynamics.

The mathematical side involved an iterative approach very similar to that applied in the traffic flow simulation used in this case but this is only 2 dimensional with only local interactions, CFD has to model the whole flow field out to infinity in all directions.

I studied at Imperial College London, where all the Formula One teams hired the departments state of the art test facilities.

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>
