

## Computational Intelligence driven Integrated Traffic Management and Air Quality Control using Space Services

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Urban transport is currently unsustainable. The use of cars has increased and urban environments are in dire need of new planning and management methodologies to keep traffic flowing. iTRAQ – Integrated Traffic Management and Air Quality using Space Services is a European Space Agency funded project led by a consortium of UK industry, academic and local authority partners. The consortium developed and validated a dynamic system for optimising the use of the road network balanced with the need to sustain high standards of air quality. iTRAQ uses a number of inputs that enable it to sense the current situation in near-real-time and provide accurate forecasts using Artificial Neural Networks. The system then uses CI optimisation techniques together with the predictions to provide enhanced traffic and air quality management strategies.

### Biography:

Benjamin N. Passow is a Senior Lecturer in Computational Intelligence at De Montfort University in Leicester, UK. He received the B.Sc. degree in Information Technology in Engineering from the University of Cooperative Education in Heidenheim, Germany, in 2005, and the M.Sc. and Ph.D. degrees from De Montfort University in 2007 and 2011 respectively.

He is a founding member of De Montfort University's Interdisciplinary research Group in Intelligent Transport Systems (DIGITS) and research active in the Centre for Computational Intelligence (CCI) for 8 years. He is PI, CI, and RF on various projects including EU FP7, ESA, and UK HEIF projects. In 2009 he received the Machine Intelligence Award from the British Computer Society in Cambridge.

His research interests include the theory and application of computational intelligence in intelligent transport, acoustic sensing, autonomous mobile robots, unmanned aerial vehicles, and embedded systems.