

*Spring 2013 Colloquium*

**“NowGen – Achieving the Projected Benefits of the Next Generation  
Air Transport System in the Near Term”**

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Associate Professor

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**Thursday, April 11, 2013**

**3:00 P.M.**

**ARMS 1109**

**Abstract**

If the proposed Next Generation Air Transport System (a.k.a. NextGen) is realized as envisioned by those who have promoted and spearheaded its development, then it will be in many ways “all things to all people.” To airlines, and by extension the travelling public and those who ship cargo by air, it will provide greater and more robust capacity at airports, the critically constrained nodes in the air transportation system, as well as in congested terminal areas and en route traffic flow corridors. To air navigation service providers and air traffic controllers, it will provide the automation and decision support tools that will enable the aforementioned growth in aviation without increased human resources.

However, despite all the great capabilities that have been promised, the reality is as the Government Accountability Office has stated in a recent report that while “the Federal Aviation Administration (FAA) must deliver capabilities that provide aircraft operators with a return on their investments in NextGen avionics to convince operators to continue making equipment investments... operators have expressed concerns that FAA has not produced the navigational procedures needed to achieve benefits from existing avionics, such as reduced fuel burn and flight time.” Thus, there is a great need for new and more immediate ways of leveraging the capabilities that are being developed and implemented so that operators can start reaping the promised benefits.

To this end, I will outline the key challenges that we as a nation have faced over the last 40+ years in the development and implementation of new or improved aviation infrastructure, and present a set of algorithms, procedures, and policies that could, if enacted quickly, provide much of the projected benefits of NextGen in the near term.

**Bio**

John-Paul Clarke is an Associate Professor in the Daniel Guggenheim School of Aerospace Engineering with a courtesy appointment in the H. Milton Stewart School of Industrial and Systems Engineering, and Director of the Air Transportation Laboratory at the Georgia Institute of Technology.

His research and teaching in the areas of control, optimization, and system analysis, architecture, and design are motivated by his desire to simultaneously maximize the efficiency and minimize the societal costs (especially on the environment) of the global air transportation system.

Dr. Clarke has been recognized globally for his seminal contributions in air traffic management, aircraft operations, and airline operations. His honors include the 1999 AIAA/AAAE/ACC Jay Hollingsworth Speas Airport Award, the 2003 FAA Excellence in Aviation Award, the 2006 National Academy of Engineering Gilbreth Lectureship, and the 2012 AIAA/SAE William Littlewood Lectureship.

He is an Associate Fellow of the AIAA, and a member of AGIFORS, INFORMS, and Sigma Xi.

*An informal coffee & cookie reception will be held prior to the lecture at 2:30 p.m. in  
the Hosteler Student Lounge (directly in front of ARMS 3<sup>rd</sup> floor elevators).*

COLLOQUIUM