On-Demand Virtual Highways for Dense UAS Operations

David Sacharny, Thomas C. Henderson and
Vista Marston
University of Utah

UUCS-21-012

School of Computing
University of Utah
Salt Lake City, UT 84112 USA

7 May 2021

Abstract

The methods and protocols for coordinating airspace access can impact a number of metrics that are important to operators and system designers. For example, the time when an operator would like to fly a particular trajectory may be delayed if there are many intersecting trajectories by other aircraft. From a system-level perspective, it would be helpful to know how the number of simultaneous operations affects this measure of delay. Regarding the method of coordination, it is also important to consider what information must be shared in order to provide safe access – it may be undesirable to share detailed trajectory information. This paper describes a method for building on-demand airspace networks and applies Lane-Based Strategic Deconfliction (LBSD) to support dense airspace operations.