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**DETERMINATION OF MINIMUM REQUIRED FSII USE AND PROCUREMENT
LIMITS FOR USAF AIRCRAFT**

Matthew J. DeWitt¹, Steven Zabarnick¹, Steven Shaeffer², Theodore Williams¹, Zachary West¹, Linda Shafer¹, Richard Striebich¹, Scott Breitfield¹, Ryan Adams¹, Rhonda Cook¹, Charles L. Delaney³ and Donald Phelps⁴

¹University of Dayton Research Institute, 300 College Park Dayton, OH 45469-0116 USA

² Science & Technology Division, Air Force Petroleum Agency, 2430 C. St., Building 70, Wright-Patterson Air Force Base, OH 45433 USA

³C4e, Inc., 11901 Topperwein Rd., Suite 904, San Antonio, TX, 78233 USA

⁴Air Force Research Laboratory, Fuels Branch AFRL/RZPF, Wright-Patterson Air Force Base, OH 45433 USA

Fuel System Icing Inhibitor (FSII) is one of the required additives in U.S. military aviation fuels JP-5 and JP-8. The primary function of the FSII is to prevent solidification of free water within the fuel, which can adversely affect fuel system operation. Di-Ethylene Glycol Monomethyl Ether (DiEGME) is the currently approved FSII, with a required procurement dosage of 0.10-0.15% by volume for both fuels. The use limits are currently 0.03% (JP-5) and 0.07% (JP-8), respectively. Many motivating factors, ranging from logistical/economic issues to application-based concerns, exist for determining if the required procurement and use limits can be reduced. Lower FSII requirements could significantly reduce associated logistical footprint and procurement issues and would render a considerable cost savings. In addition, environmental and material compatibility concerns related to DiEGME could be significantly alleviated.

Extensive laboratory and large-scale studies have been performed to provide improved insight into the manner by which FSII interacts with free and dissolved water and prevents ice formation in fuel systems. These efforts have provided valuable information which assists in determination of a minimum required FSII dosage while allowing for safe operability of varying aircraft platforms and mission profiles. Several of these efforts were presented and discussed at the 10th International IASH Conference; additional results and progress will be presented herein. These include: supplementary laboratory evaluations, large-scale component icing studies, the potential effect of a reduced DiEGME concentration on Fuel Tank Topcoat Peeling, and a supply-chain study to investigate potential expected FSII losses during transport and storage. An overview of these various efforts will be provided and implications will be discussed.