



24 May 2023

Mark E. Davis, President
Aerospace and Electronic Systems Society

To: Jeffrey S. Herd, Ph.D., Group Leader - RF Technology, MIT Lincoln Laboratory

CC: Alan J. Fenn, Ph.D., Senior Staff - RF Technology, MIT Lincoln Laboratory
Eric Evans, Directory MIT Lincoln Laboratory

Subject: Reference for IEEE Milestone Award Submission

1. The Aerospace Electronics & Systems Society (AESS) is very pleased to provide our endorsement for this major IEEE Milestone. We have been very aware of the developments by MIT Lincoln Laboratory in the development and publications of a “Long-Range Wideband Three-Dimensional Satellite Imaging Using the ALCOR Radar”. This early systems technology has been recognized as an early world-class system development, with an extensive list of technology capabilities being used today in several surveillance applications.
2. The ARPA-Lincoln C-Band Observables Radar (ALCOR) system was developed in the late 1960s for providing two-dimensional range-Doppler images of near Earth orbiting and reentering objectives. The breakthrough technology was providing multi-GHz bandwidth, high power-aperture radar design to detect and characterize space objects. By applying the evolving inverse synthetic aperture radar (ISAR) processing, details of these space objects could be evaluated in terms of their operation and capabilities at very long distances and all weather.
3. Initial operation of the long range wideband satellite imaging was demonstrated in 1970. This aerospace system capability was prior to the establishment of AESS (1973) and was a precursor to many space-related technologies for our Society. Soon after early demonstration of the ALCOR wideband 3 dimension satellite imaging technologies, there was extensive publication of digital SAR techniques and wideband antenna imaging in IEEE Aerospace Electronic Systems and Antennas and Propagation Systems Journals. The 30-year

criterion for an IEEE Milestone is certainly met based on this 50 plus years of this surveillance system technology.

4. MIT Lincoln Laboratory has been a major system and technology organization, since its inception in the 1940s. They have produced many leaders in aerospace systems and supported the careers of today's radar leaders. The ALCOR capability in Kwajalein Atoll has been a major laboratory for system technologies and technologists. This IEEE Milestone is timely and well warranted.

Sincerely

A handwritten signature in black ink, appearing to read 'Mark E Davis', with a long horizontal flourish extending to the left.

Mark E Davis
AEISS President
Clinton NY 13323 USA
Phone: +1 (315) 725-0505
Email: medavis@ieee.org