IEEE Signal Processing Society Synthetic Aperture Standards Committee (SASC)

Meeting Minutes (draft)

Thursday, September 19, **12:00p – 1:00p EDT (UTC-4)** via teleconference

https://ieeesa.webex.com/ieeesa/j.php?MTID=mdcfbd33a2329868f9009363c4836741f

1. Call to Order

2. Introduction and Affiliation Declarations
    a. Please provide name, email, affiliation on Google form
    b. Please attest on Google form to having read the IEEE policies on copyrights, behavior, and patents
    c. Establish Quorum

3. Approval of Agenda

4. Approval of Previous Meeting Minutes

5. IEEE Patent, Behavior, and Copyright Policies
    a. Review if necessary -- IEEE policies
    b. Call for patents

6. Discussion Topics:
    a. Guest Speaker: Dalisa Gonzalez, IEEE Program Manager
    b. Upcoming SASC webinars **– *Radiometry on Thursday October 31 at 11 am EST***
    c. Kick-off meeting of Digital Array Study Group – joint effort with GRSS Standards Committee – ***Thursday October 17 at 1 pm EST***
    The Digital Array Project Authorization Request (PAR) Study Group (DA-SG) is tasked with identifying and recommending to the Synthetic Aperture Standards Committee (SASC) potential digital array architectures, techniques, or technologies that may benefit the most from standardization via a standard, guide, or recommended practice. Some of the topics that may be considered by the DA-SG include calibration methods and hybrid digital-analog architectures.
    The proposed timeframe for the DA-SG to complete its analysis and to address the questions in Section 7.2.1 of the IEEE SASC Policies and Procedures is six months. Based on the analysis, the DA-SG will present a proposed PAR related to the standardization of digital array methods and architectures to the SASC. The SASC will hold a ballot to approve the PAR in which case the PAR will be forwarded to the IEEE Standards Association Standards Board (SASB) and the New Standards Committee (NesCom).
    d. Kick-off meeting of P3520 Recommended Practice for Leveraging Machine Learning in Synthetic Aperture Imaging and Sensing Working Group – ***kick-off meeting in October***
    The scope of the machine learning working group is to develop a recommended practice for leveraging Machine Learning (ML) in synthetic aperture applications, including radar, sonar, radiometry,
    magnetic resonance imaging, automotive radar, remote sensing, ultrasound, and other imaging modes.
    The recommended practice addresses the choice of Machine Learning architectures for different imaging scenarios and

the appropriate training regime. The recommended practice provides techniques for object classification and segmentation in synthetic aperture images. The working group will explore the best data format for ML algorithms in different synthetic aperture applications.
Examples of machine learning architectures described by the recommended practice include traditional approaches such as deep learning, autoencoders, reinforcement learning, transformer models, convolutional neural networks (CNNs), recurrent neural networks (RNNs), and new generative approaches. Further different data regimes are considered, including subsampled and sparse approaches, as well as fully sampled data collects.

7. New Business

8. Future Meetings – ***November 14 (8 weeks)***

9. Adjourn