Meeting Minutes for Synthetic Aperture TWG Kick-off on May 19

1. The preliminary roster and contact information for the group is

Name	Email
Birsen Yazici	yazici@ecse.rpi.edu
Jim Fienup	fienup@optics.rochester.edu
Fauzia Ahmad	tug80470@temple.edu
Maria Greco	maria.greco@unipi.it
Karim Seghouane	abd-krim.seghouane@unimelb.edu.au
Braham Himed	braham.himed@us.af.mil
Christoph Mecklenbräuker	cfm@nt.tuwien.ac.at
Paul Rosen	Paul.A.Rosen@jpl.nasa.gov
Piya Pal	pipal@eng.ucsd.edu
Wei Liu	w.liu@sheffield.ac.uk
Dave Michelson	davem@ece.ubc.ca

2. Tulay Adali mentioned that the IEEE Signal Processing Society would like to move ahead with Board-led initiatives for the rest of 2020 and 2021 to use unspent money that had been allocated to initiatives. Please respond to Tulay with any ideas for initiatives such as a virtual addition to conferences, education initiatives that are clearly differentiated and competitive, diversity initiatives, technical innovation and addressing societal grand challenges. Please send initiative items to Tulay by May 26.
3. Peter Vouras presented an overview of synthetic aperture wireless channel sounding research being conducted at the National Institute of Standards and Technology
4. Based on initial feedback the following topics are of particular interest to the group:
    a. The impact of position uncertainties and correlated errors. Especially the impact of phase drift and position uncertainty during the data acquisition time for synthetic aperture radar (SAR), remote sensing, and vehicular radar
    b. Wideband beamforming and frequency invariant array patterns
5. Dr. Braham Himed offered to present a brief overview of Distributed SAR at the next group meeting. Distributed SAR is a novel concept for achieving higher resolution radar images from a multitude of distributed independent platforms.
6. At the next meeting the group should consider prioritizing topics of interest. The group may decide to pursue problems together in a sequential fashion or the group may decide to pursue problems along parallel tracks by splitting into smaller sub-groups. To facilitate the process of prioritizing topics of interest, Mr. George Olekson will create an online poll to query support for the following topics:
    a. The use of synthetic apertures as phased array test beds. For example, using synthetic apertures to determine the impact of mutual coupling between hardware array elements on angle estimation performance. Or the use of synthetic apertures to evaluate the effectiveness of array calibration techniques
    b. Wideband beamforming techniques and the design of frequency invariant array factors

    c. New sampling lattices such as cylindrical or spherical
    d. Sampling lattices that are spatially sparse or simultaneously sparse in space and time
    e. Impact of position uncertainties across the synthetic aperture, correlated errors, phase drift, and residual calibration errors on metrics such as radar image quality, angle estimation accuracy
    f. Other topics volunteered by group members
7. Mr. George Olekson will distribute an online poll to query the group for the most convenient meeting time. The next meeting is tentatively scheduled for the week of June 15. Ideally, we will determine a few consensus times that are unanimously acceptable to everyone.
8. Thank you for participating and please let me know if you have any comments.