| TOPIC	**Sensor Fusion and Sensor-Target Allocation**
ORGANIZERS	Student Leadership Council and Faculty of ACIT Institute and TECHLAV Center
AREA	Control & Estimation
SPEAKER	Dr. Shashank Tamaskar
DATE	Friday October 13, 2017
TIME	3:00 – 4:00 P.M. (EST)
VENUE	Fort IRC 410, North Carolina A&T State University, UTSA and SIPI will be joining through video-conferencing
FEES	No Charge

SYNOPSIS

Sensor fusion and target tracking using sensor networks is crucial for diverse military and civilian applications such as-battlefield management, autonomous vehicles, internet of things, weather monitoring and healthcare. As we transition to larger and more complex systems, distributed techniques for fusion and target tracking are becoming increasingly popular owing to their scalability, robustness to targeted attacks and fault tolerance. These techniques rely on P2P communication between sensors, and distribute the fusion and tracking tasks across large number of assets. This minimizes the work load on a single asset and makes the system robust to failures and targeted attacks. One of the key challenges in these distributed techniques is to ensure consensus of information among the various assets so that they can operate in a concerted fashion. Some of the other factors which further complicate this matter are-limited computational capability, constrained communication bandwidth of the sensory nodes and the fact that not all sensor nodes can communicate with each other. This talk will focus on some of the recent developments in the field and how some of the aforementioned challenges have been addressed. We will further describe how consensus can be achieved in the presence of sensor failures/faults. Finally, we will describe our vision for achieving a common operating picture in a distributed fashion and its potential to support battlefield and civilian applications.

ABOUT THE SPEAKER
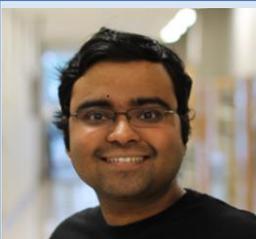
Shashank Tamaskar is working as a Research Associate Scientist at Center for Integrated Systems in Aerospace (CISA), Purdue University. He received his Bachelor of Technology from Indian Institute of Technology (IIT), Bombay, India in 2005 and completed his MS and PhD in Aeronautics and Astronautics from Purdue University in 2011 and 2014 respectively. After his graduation, he worked as Technical Specialist, Advanced Dynamic Systems and Controls group at Cummins, Inc. and developed control algorithms for prototype engines. His research interests include diverse topics related to design of aerospace systems, air transportation, network theory, sensor fusion and dynamics and controls. He participated in DARPA, FAA and NASA sponsored research projects and has numerous patents and publications. He has also received several awards such as Boeing Excellence Award for developing algorithms to measure complexity, and awards from Delphi Inc. and AGI Inc. for designing innovative algorithms for formation flying and swarm optimization. He also founded and led the development of first student satellite of IIT Bombay, Pratham, which was launched by Indian Space Research Organization in September 2016.