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# ***Sensors and Systems for Space Applications IX***

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**Genshe Chen**  
*Editors*

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## Introduction

Sensors and systems are often commodities, which must be efficiently utilized in order to provide suitable revenue to space applications, operators, and users. Operators and users, however, do not pay enough attention to cost affordability, but need desirable quality-of-service (QoS) provision. Unfortunately, cost affordability and QoS support are conflicting needs. A new possible approach addressing both these issues is represented by the invited talk from Aerospace Corporation, "Commercial Satellite Communication Service Program and Technical Baseline Strategy Development Approach Using Portable Pool Bandwidth Concept." The innovation of this approach relies on the fact that it introduces direct interactions between the Better Buying Power (BBP 3.0) directive and the ownership of program and technical baselines with the aim to increase solution competition and cost affordability. The activities carried out for the subject conference have been a very good opportunity for the civil and military space community to integrate the competencies of different technical areas considering all the aspects of: space situational awareness and defense space control capabilities to characterize and mitigate space weather, orbital debris and co-orbital anti-satellite threats; electromagnetic wave interferences to characterize, predict, and mitigate its effects on both civil and military satellite communication systems; and methodologies for spacecraft cyber defense-in-depth to enable spacecraft mission assurance in contested cyber environments. Such activities attracted the interest of government agencies, academia and industry partners. In particular, the focus topics for this year were defined, thus contributing to the various technical sessions of the conference 9838: Sensors and Systems for Space Applications IX:

- Persistent Space Situational Awareness
- Defense Innovation Initiative
- Precision Navigation and Decision Support in Difficult Environments
- Resilience Space and Cyberspace
- Vulnerability Assessments and Reactions for Space Communications and Operations
- High-Bandwidth Secure Satellite Operations and Communications
- Augmentation of Small Satellites and Flexible Space Mission Planning
- Space Payload Technologies for Dual Military-Civil Operations
- Human-Machine Interaction

We had the pleasure to acknowledge the authors for choosing this avenue for publication of their technical contributions that resulted in quality work in the SPIE database. A very special thank you to the members of our program committee and the session chairs for their tireless support to make this conference another

success. Many thanks are also due to the SPIE staff for their invaluable help in making this all possible.

As two of conference chairs, we speak for the others in saying that we really do need new members and volunteers for the program committee, and we really do want to hear what you have to say. This includes getting help and hearing from you in technical matters as well as in other matters ranging from the way this conference is run to the presentation in this proceedings volume. Program committee and volunteers got us this far and continue to move us forward as a whole.

Lastly, looking ahead to 2017, we wish success to our new committee members for next year. To you, our readers, many thanks for your continued interest. What more could a conference chair want?

**Khanh Pham**  
**Genshe Chen**