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Contents

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Session Chairs

1 Geo-registration and Uncertainty Handling in Geospatial Data
Peter Doucette, National Geospatial-Intelligence Agency (United States)

2 Geospatial Information Application Needs and Challenges
Paul B. Deignan, L-3 Communications Integrated Systems (United States)

3 Geospatial Data Processing Exploitation and Visualization
Paul B. Deignan, L-3 Communications Integrated Systems (United States)

4 Geospatial Processing Exploitation and Visualization
Kannappan Palaniappan, Univ. of Missouri-Columbia (United States)

Panel on Synergistic Data Fusion through Multi-Sensing Enablement
Shiloh L. Dockstader, ITT Exelis (United States)

Introduction

A Geospatial Information System (GIS) describes any information system that collects, integrates, stores, edits, analyzes, shares, and displays geographic information. GIS systems are fundamental to today's information networks and inherently encompass techniques that transform "raw bits and bytes" into "actionable information", also termed InfoFusion. GIS applications incorporate tools that allow users to create interactive queries (user-created searches), analyze spatial information, edit data, maps, and present the results of all these operations. In the commercial sector, GIS systems are used in cartography, remote sensing, land surveying, utility management, geographical strategic natural resource planning, photogrammetric science, geography, urban planning, emergency management, navigation, and localized search engines. For example, defense and security applications, such as Unmanned Ariel Systems and Airport Security Systems, are rapidly transforming from basic sensor collection systems that "take pictures" to fully-capable GIS systems that incorporate multi-sensor collections, perform advanced processing and correlations in real-time, initiate sensor cross-cueing, and allow multiple users to instantly retrieve and disseminate information. GIS is critical to defense and security providers in order to enable satisfying emerging demands and rapid access to information for situational awareness and forensic back -tracking missions.

These proceedings provide the SPIE community with a collection of perspectives, advancements, learning, and new solutions from a range of global industry, government and academic authors. The motivation of this conference track is simple: to expand the awareness of advanced architectures and enabling technologies that address emerging and adaptive security threats. Technical and scientific papers related to advancements in Architectures for GIS Collection Sensors, Data Processing Algorithms and Techniques, Information Dissemination, Serving, Search, and Query Methodologies, and Information Visualization Solutions that push beyond the scope of the state-of-the-art in industry are solicited.

On behalf of the Conference Chairs, Dr. Kannappan Palaniappan, Mr. Matthew Pellechia, and Mr. Richard Sorensen, and our cochairs, we hope you find these proceedings useful in the advancement of GIS technologies.

Matthew F. Pellechia
Richard J. Sorensen
Kannappan Palaniappan