

Earth Science Informatics Technical Committee

Chairs:

Peng Yue, Wuhan University Rahul Ramachandran, NASA/MSFC Peter Baumann, Jacobs University Bremen

Standards Group:

Siri Jodha S. Khalsa, University of Colorado Meixia Deng, George Mason University

GRSS AdCom Meeting

IGARSS 2017

Fort Worth, Texas, USA, July, 2017





Content

- Presentation of the TC
- Review of what has been done in 2016 with a highlight
- IGARSS sessions (shortly) and the main thematic focus
- Ongoing and new initiatives for 2016/2017
- Publications
- Others





ESI TC Mission Statement



The mission of the Earth Science Informatics
Technical Committee (ESI TC) is to advance the
application of informatics to the geosciences and
remote sensing, to provide a venue for ESI
professionals to exchange information and
knowledge, and to give technology advice to major
national and international ESI initiatives.





Research Areas

- Data and information policies
- Data stewardship (preservation, provenance, quality, etc.)
- Knowledge representation and information models
- Interoperability and standards
- Data discovery and access
- Web-based services and analysis
- Semantic representation of entities in the Geosciences (e.g., spatial and process ontologies, vocabularies, semantic web)
- Sensor web and applications
- Cloud computing
- Information and knowledge extraction; decision support systems
- Earth system modeling
- Software tools to visualize and analyze geoscience data
- Emerging information technologies and their applications in the geosciences

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ESITC membership status

- **Currently ESI TC has more than 100 members**
- **Countries/Areas represented:**

Australia Germany

Switzerland

- Belgium - India

Taiwan

Brazil – Italy – Turkey

CanadaJapan

– UK

ChinaNew ZealandUSA

France – South Africa





Agro-Geoinformatics 2017

- ESITC has been supporting the international conference series on Agro-Geoinformatics
 - The Sixth International Conference on Agro-Geoinformatics
 - Dates: August 7-10 2017
 - Location: Fairfax, VA, USA
 - ESI TC is technically co-organizing the conference: ESI TC chair Peng Yue is the scientific committee co-chair







ESI Invited Session: IGARSS 2017

- MO4.L10: Intelligence for Big Geospatial Data
 - Time: Monday, July 24, 16:20 18:00 Location: Room 202 B
 - Session Chairs: Peng Yue, Wuhan University, Peter Baumann, Jacobs University Bremen

Presentations

- MO4.L10.1: CUMULUS: NASA'S CLOUD BASED DISTRIBUTED ACTIVE ARCHIVE CENTER PROTOTYPE
- MO4.L10.2: A STREAM COMPUTING BASED APPORACH FOR UPDATING WATERLOGGING INFOMATION ON REMOTE SENSING IMAGES
- MO4.L10.3: DEEP WEB CRAWLING FOR INSIGHTS FROM POLAR DATA
- MO4.L10.4: ADVANCES IN FUSION OF BIG GEOSPATIAL DATA
- MO4.L10.5: LATENCY ANALYSIS OF LARGE VOLUME SATELLITE DATA TRANSMISSIONS





GRSS-OGC Joint Invited Session: IGARSS 2017

- FR2.L7: Remote Sensing Big Data and the Internet of Things
 - Time: Friday, July 28, 10:40 12:20 Location: Room 203 A
 - Session Chairs: Trevor Taylor, Open Geospatial Consortium (OGC),
 Peng Yue, Wuhan University

Presentations

- FR2.L7.1: BIG DATA MEETS INTERNET OF THINGS: A STANDARDS-BASED PERSPECTIVE
- FR2.L7.3: AN OPEN STANDARDS BASED METHOD FOR INTEGRATED ENVIRONMENTAL MODELLING
- FR2.L7.4: CONNECTING THE INTERNET OF THINGS TO THE EO
 COMMUNITY AND THE GEOSPATIALLY ENABLED WEB USING OGC
 STANDARDS
- FR2.L7.5: APPLYING DISCRETE GLOBAL GRID SYSTEMS TO SENSOR NETWORKS AND THE INTERNET OF THINGS



Geoscience and Remote Sensing Society



ESI TC 2018 New Initiative Proposal – Submitted

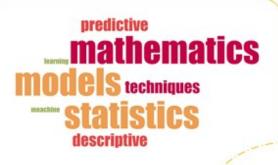
- 2018 International Workshop on Big Geospatial Data and Data Science
 - Organized by ESI TC and Wuhan University
 - Sept. 22 23, 2018 , Wuhan, China
- Lead:
 - Peng Yue, Wuhan University
- Funding
 - 3% Initiative 2018 \$10K approved to reimburse travel expense for invited experts or additional travel costs and facilities.
- Return on Investment
 - Promoting activities of Globalization Committee and ESI TC
 - Enhancing the reputation of IEEE GRSS in the geospatial field
 - Fostering collaboration with sister societies including ISPRS and OGC
 - Potential new members of IEEE GRSS
 - Advancing theories and practices on big geospatial data





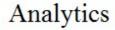


ESI TC Article for GRSM 2016 December Issue



information
distributed volunteered
paradigmlongterm shift provenance
preservation
environement management
lifecycle







Standards





Member Contributions: Miscellaneous

ESI TC member Hampapuram K. Ramapriyan

- Distinguished Lecturer Series: three in Shanghai,
 Wuhan, and Beijing GRSS Chapters in May, 2017, and
 will do one in September 2017 in Melbourne, FL and the
 other in November 2017 in Hyderabad, India
- New Work Item Proposal (NWIP) for ISO 19165-2 standard: "Geographic information -- Preservation of digital data and metadata -- Part 2: Content specifications for earth observation data and derived digital products"





GRSS and Standards Development

Peter Baumann, ESI chair:

- ISO 19123 ISO 19123-1 (contributing expert)
 - » Revision of 19123; NWIP accepted
- ISO 19123-2 (project leader)
 - » Adopting OGC Coverage Implementation Schema (CIS); entering DIS ballot
- ISO 19163-2 (contributing expert)
 - » Optical remote sensing imagery, based on OGC CIS / ISO 19123-2
- ISO 9075 SQL Part 15: Multi-Dimensional Arrays (MDA) (initiator, co-editor)
 - » n-D arrays in SQL, domain-neutral
- INSPIRE WCS Download Service
 - » Adoption of OGC WCS & WCPS
- Indirect contribution to standards: The Datacube Manifesto
 - » <u>http://earthserver.eu/tech/datacube-manifesto</u>

