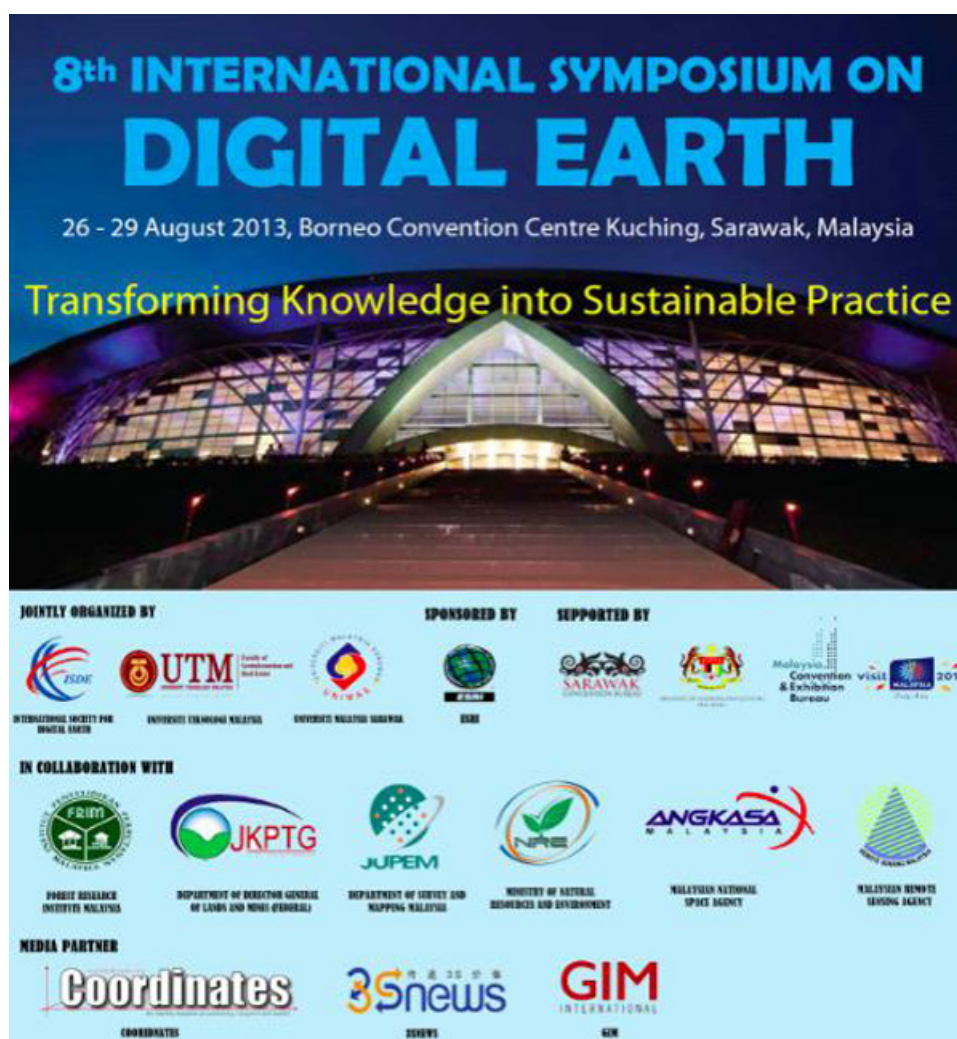


## Preface

### Proceedings of the 8th International Symposium of Digital Earth (8th ISDE) 2013

Kuching, Sarawak, Malaysia, 26th–29th August, 2013



This proceedings consists of the peer-reviewed papers from 8th International Symposium for Digital Earth (ISDE) held in Kuching, Sarawak, Malaysia during 26th–29th August, 2013. The 8th ISDE was a successful event in the Symposium Series of the International Society of Digital Earth, that was previously held in China (1999), Canada (2001), Czech Republic (2003), Japan (2005), the United States (2007), China (2009), and Australia (2011).

The 8th ISDE, with the theme “Transforming Knowledge into Sustainable Practice” aims to enable digital earth scientists, experts and professionals related to the field of geospatial science and technology to provide a brand new opportunity to share their ideas and insights on how we share knowledge and act together globally. In addition, the ISDE symposium series has been providing a venue for researchers and industry practitioners to discuss new ideas, collaborate to solve complex solutions to various complex problems, and importantly, pave new ways in digital earth environment.

This 8th ISDE included 20 technical sessions, workshops and student sessions in various areas of digital earth; ranging from digital earth vision & innovation; earth observation technologies; ICT technologies (including spatial data infrastructures); empowering the community and engaging society; applications and innovation of digital earth for environmental applications such as hazard, pollution, flood, air quality, disaster and health, biodiversity, sustainability, forestry, early warning and emergency management, national security, natural resource management and agriculture; mining, energy and resources development; transformation towards sustainable low carbon society; digital city and green cities: towards urban sustainability; and managing water environment for sustainable development.

The success of the 8th ISDE was due to commitments of many: authors, keynote speakers, session chairs, the organising committee, technical and scientific committee, student volunteers from Universiti Teknologi Malaysia (UTM) and Universiti Malaysia Sarawak (UNIMAS), and many others of various roles. We acknowledged all sponsors to 8th ISDE, namely Sarawak Convention Bureau, Malaysia Convention & Exhibition Bureau, and ESRI. We also thanked all exhibitors and contributors of the 8th ISDE: TSKAY Technologies Sdn Bhd, Coordinates-India, Taylor & Francis-Singapore, Beijing Space Eye-China, RS&GIS Consultancy, CRCIS-Australia, Jurupro Sdn Bhd, Inst of Remote Sensing and Digital Earth (RADI)-China, Department of Survey and Mapping Malaysia, SPECIM, Satellite Imaging (M) Sdn Bhd, IPASA-UTM, Sustainable Research Alliance-UTM, Sarawak Forest Department, International Society of Digital Earth-China, INSTeG-UTM, and UNIMAS.

August 2013

Mazlan Hashim

Samsudin Ahmad

Yin Chai Wang

### Organization of the 8th International Symposium for Digital Earth (ISDE)

ISDE 2013 was hosted by the Institute of Geospatial Science & Technology (INSTeG), Universiti Teknologi Malaysia (UTM), and co-hosted by the Universiti Malaysia Sarawak. The organizations of the symposium are as follows:

<b>Patrons</b>	Zaini Ujang (Vice-Chancellor, <i>Universiti Teknologi Malaysia</i> ); and Khairuddin Ab Hamid (Vice-Chancellor, <i>Universiti Malaysia Sarawak</i> )
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