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TEKNOLOGI  
MARA

CELEBRATING  
COMMERCIALISATION  
YEAR 2014

# iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention  
innovation  
& design  
exposition 2014

INNOVATEUR  
wannabe!  
2014

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DEWAN AGUNG TUANKU CANSELOR (DATC)  
UNIVERSITI TEKNOLOGI MARA  
MALAYSIA

*Bridging  
the valley of death :  
advancing the  
commercialisation  
of research*

RESEARCH BOOK

# iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

## invention innovation & design exposition 2014

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## FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

**Tan Sri Dato' Sri Sallehuddin Mohamed**  
Pro-Chancellor, Universiti Teknologi MARA

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## WEB-BASED VRGIS PROPERTY MARKETING INFORMATION SYSTEM (VRGIS-PMIS)

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The emergence of panoramic virtual reality (VR) as visualization tools and acceptance of GIS technology in real estate business have seen to be a major factor of integrating these technologies to increase the marketing efficiency and information dissemination. This study presents the integration of panoramic VR and geoprocessing queries of the design and development of the Web\_based GIS residential property Marketing Information system (WGRP-MIS). This system intended to be integrated with the virtual GIS technology enabling the consumers to virtually explore the potential property upon the multi criteria selection through assisted geo-processing query. The system is built using ArcGIS Desktop 10, ArcGIS server 10 and ArcGIS Viewer for Flex 3.4. The client-server architecture used for this system is Representational State Transfer (REST) where the client web application is built using Adobe Flex Application programming Interface (API) through application builder, and customized using Widgets and scripting using extensible Markup Language (XML). The spatial data features are stored in a Geodatabase and published as Map Service through ArcGIS server. The base maps are acquired from the online web services (Bing, ESRI) and the Animation/Panoramic view of the property is stored in Adobe Shockwave Flash (SWF) file format. The objectives of this study are to web-enable the existing GIS Residential Property marketing Information system (GRPMIS) for wide range accessibility; to improve the user selection and enhance processing queries for fast response and accurate information retrieval; and to integrate the existing system with panoramic VR that will enhance the user experience and enable virtual exploration. The system provides powerful marketing tools for the users, seller and buyers. It has a huge potential to be commercialized with the current property marketing system available in Malaysia such as [www.mudah.my](http://www.mudah.my), [www.iproperty.com](http://www.iproperty.com), [www.auctionmart.my](http://www.auctionmart.my), [www.starproperty.com](http://www.starproperty.com), [www.propertyguru.com](http://www.propertyguru.com), [www.myproperty.com.my](http://www.myproperty.com.my), [www.thinkproperty.my](http://www.thinkproperty.my), [www.adarumah.com](http://www.adarumah.com) and many more. This system offers more flexible way with useful information stated above to make selling and buying a property more enjoyable and fulfilled without neglecting important information. This study highlighted numerous potential of panoramic VR and GIS potential that can be integrated into a system. The potential expansion of the Pilot system (GRPMIS) was successfully improved with the capabilities to perform some GIS elements of analysis (geo-processing) within the improved system (WGPMIS). With minimum cost, the improved system is able to view the GIS data layers online with the availability of BING map and functions are enabled through the use of Representational State Transfer (REST) as client -server architecture. The integration of panoramic VR has been notably simplified the 3D GIS representations by using the image-based panoramic that offers significantly high resolution of visualization. The web application was mainly built using ADOBE Flex Application programming Interface (API) through application builder, and most customization using Widgets and Extensive Mark-up Language (XML) scripting.