



UNITED NATIONS
WORLD GEOSPATIAL INFORMATION CONGRESS

Forum conducted by the UN-GGIM Academic Network

A Sustainable and Resilient World: Capacity Building and Geospatial Research for Implementing the SDGs

11:00 - 12:00

Wednesday 21 Nov 2018

Deqing, China

Open Science and Education

Prof. Maria A. Brovelli (1) and Dr. Ivana Ivánová(2)

1 Politecnico di Milano (Italy) 2 Curtin University (Australia)

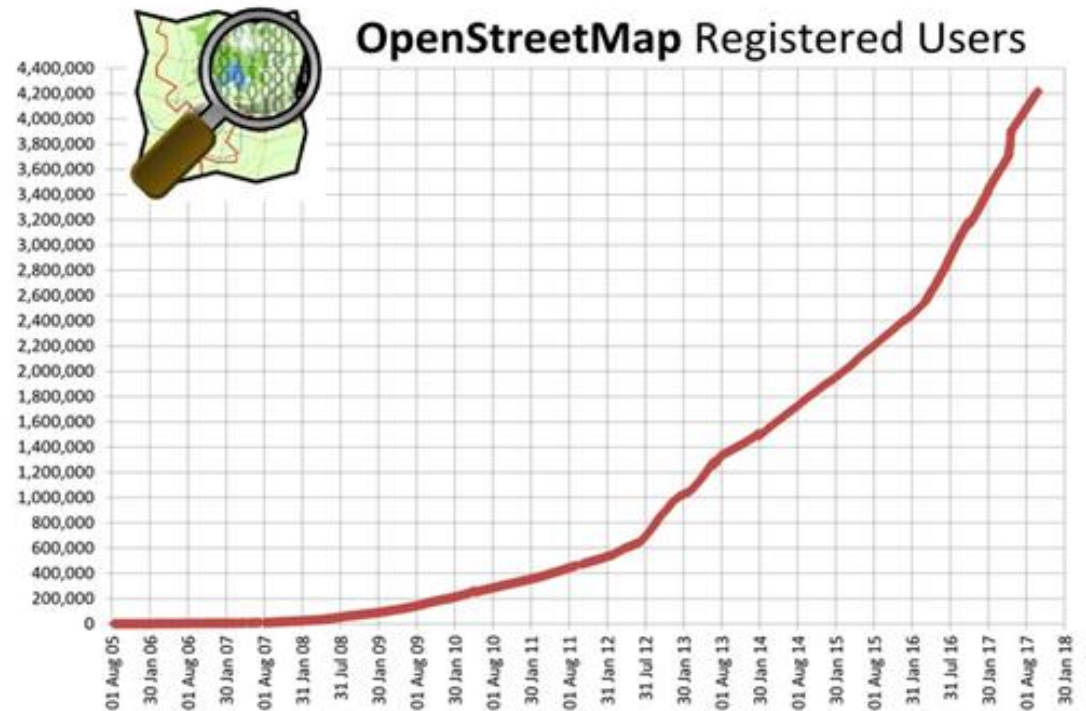


UN-GGIM | ACADEMIC NETWORK

unggim.academicnetwork.org

Open Data: OpenstreetMap (OSM)

The OSM project was born in 2004 to encourage the creation of **geo data** that is **free to use and shareable with anyone** (licensed under the **Open Data Commons Open Database License** (ODbL) by the OSM Foundation (OSMF).



OSM Ecosystem: community & technology



OSM quality (examples)

- OSM Building footprints Lombardy (Italy): the spatial accuracy is comparable to the authoritative dataset at scale 1:5000
- Streets in Kenya, Tanzania, Uganda: comparison OSM and UNECA (United Nations Economic Commission for Africa); the latter dataset is based on the Digital Chart of the World

Country	OSM [m]	UNECA [m]	OSM/UNECA
Kenya	165842875	37107320	4,5
Tanzania	426683257	55336417	7,7
Uganda	148997450	18545031	8,0



GeoForAll - OSGeo initiative

- Central to “Geo for All” mission is the belief that knowledge is a public good and Open Principles in Education will provide great opportunities for everyone.
- Educational resources (189 to date):



“GIS at school” Guidebook for biology, geograpy, and science...

This guidebook was prepared as a final publication of the EduGIS Academy project...

📅 2018/06 📁 Course Materials 👤 Get Interactive



“Introducing GIS” Tutorial with QGIS

A GIS tutorial that includes step by step instructions and video clips to help y...

📅 2018/06 📁 Course Materials 👤 Get Interactive



A Gentle Introduction to GIS

A resource for learners and educators that tries to take a more gentle road to i...

📅 2018/06 📁 Course Materials 👤 Get Interactive



<https://www.osgeo.org/initiatives/geo-for-all/>



GeoForAll - OSGeo initiative

- Network of GeoForAll labs committed to the vision “to develop collaboration opportunities for academia, industry and government organizations in free and open source GIS software, FOSS, open data, open access (publications) and contribute to open education in the future” (as defined in the ICA-OSGeo MoU)
- currently around 120 labs – check at:
<https://www.osgeo.org/geo-for-all-labs/>



GeoForAll - OSGeo initiative - example re-use

Geoprocessamento: introdução ao curso

Dr. Ivana Ivánová
Departamento da Cartografia, FCT/UNESP

Software em uso



- QuantumGIS – <http://qgis.org>
- Sistema de Informação Geográfica (SIG)
- Software livre
- Ampla documentação cujas partes tem versão português brasileiro

Introdução ao SIG com QuantumGIS

Dra. Ivana Ivánová
Departamento de Cartografia, FCT/UNESP

O objetivo deste exercício é introduzir fundamentais componentes de um sistema de informações geográficas (SIG) e familiarizar-se com QuantumGIS (QGIS). QGIS é um exemplo de SIG qual será usado nas aulas da disciplina de Geoprocessamento do curso da Geografia na FCT/UNESP. Os seguintes tarefas serão praticadas neste exercício:

- Navegação com QuantumGIS Browser
- Introdução ao QuantumGIS Desktop

Este material didático foi desenvolvido no Departamento da Cartografia, FCT/UNESP com apoio do material didático livre de GeoAcademy (fossgeo.org), consórcio dos acadêmicos que promove o uso do software livre para educação geoespacial, e com tutoriais do próprio QGIS (qgis.org).

Dados em uso

- Dados abertos da prefeitura São Paulo

13 / 15



GeoForAll - OSGeo initiative - example re-use



UNIVERSIDADE ESTADUAL PAULISTA
"JÚLIO DE MESQUITA FILHO"
Câmpus de Presidente Prudente

Página inicial | Imprensa | Fale Conosco

Acesso rápido

Unidades

Faculdade de Ciências e Tecnologia

Apresentação

Chefia

Conselho Departamental

Docentes/Pesquisadores

Docentes/Pesquisadores Visitantes

Servidores Técnico-Administrativos

Laboratórios

Grupos de Pesquisa

Cursos de Extensão

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Documentos de Interesse / Drivers

Endereço/Telefone

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Cursos de Extensão - Departamento de Cartografia

2014

Título:

Período

Inscrição

Dúvida:

Instrutor

Informação

Assessment:

Course participants are expected to:

- participate in the course during the face-to-face teaching,
- work-out the assignment and submit a functional web map application

The certificate will be awarded to those course participants that attended in the course and executed the assignment.

Technology Used:

- PostgreSQL/PostGIS DBMS - <http://www.postgresql.org> and <http://postgis.net>
- UMN MapServer - <http://mapserver.org> or GeoServer - <http://geoserver.org>
- QuantumGIS - <http://www.qgis.org>
- GeoNetwork OpenSource - <http://geonetwork-opensource.org>
- WebServer with space and permissions for students to upload files
- OpenLayers JavaScript library - <http://openlayers.org>
- Moodle LMS - <http://moodle.unesp.br> for online supervision and for course material sharing

Registration:

This course is part of regular curriculum of Department of Cartography, thus it is offered free of charge.

Applicants should register as follows:

- **post-graduate students** - Postgraduate Section
- **professionals** - Postgraduate Section as 'Aluno de pós-graduação especial'

Organizer:

Departamento de Cartografia e
Departamento de Matemática e Computação da
Faculdade de Ciências e Tecnologia
UNESP – Câmpus Presidente Prudente

Tutors:

- Profa Dra Ivana Ivánová
- Prof Dr Nilton Nobuhiro Imai
- Prof Dr Milton Hirokazu Shimabukuro



Course

Designing Geo-web
Applications for
Standard Compliant
Service-based
Spatial Data
Infrastructure

Informações

Departamento de Cartografia
Faculdade de Ciências e Tecnologia
UNESP - Câmpus de Presidente Prudente

Rua Roberto Simonsen, 305
Centro Educacional - Caixa Postal 467
19060-900 - Presidente Prudente SP

Fone: (18) 3229-5500 - Célia
(18) 3229-5317 - Ivonele
(18) 3229-5417 - Cinthia

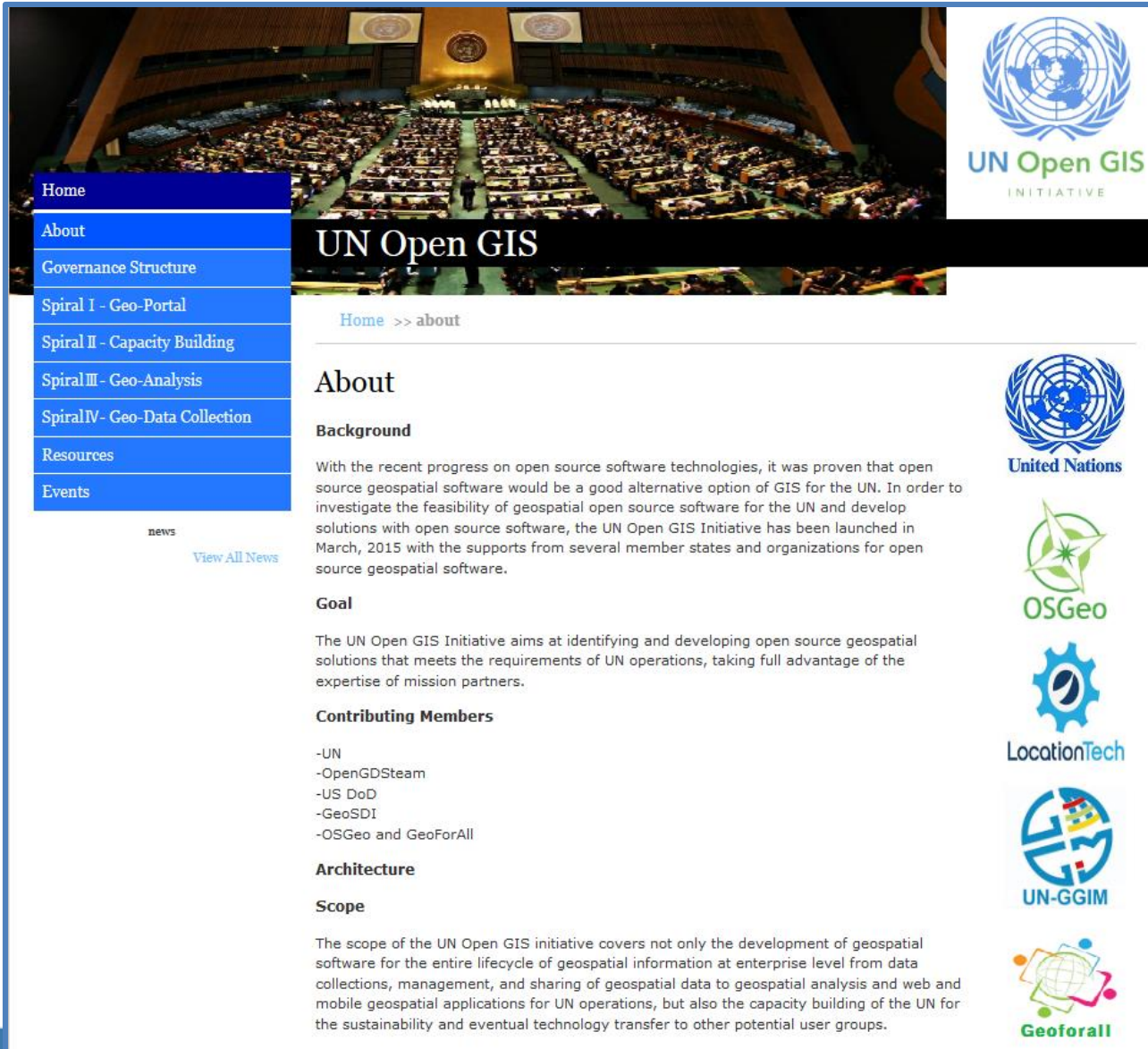
E-mail: posgrad@fct.unesp.br



UN-GGIM



UN Open GIS (OSGeo and GeoForAll)



The screenshot displays the UN Open GIS website interface. On the left is a blue navigation menu with the following items: Home, About, Governance Structure, Spiral I - Geo-Portal, Spiral II - Capacity Building, Spiral III - Geo-Analysis, Spiral IV - Geo-Data Collection, Resources, and Events. Below the menu is a 'news' section with a 'View All News' link. The main content area features a large background image of the UN General Assembly hall with the text 'UN Open GIS' overlaid. Below this is a breadcrumb trail 'Home >> about'. The 'About' section includes a 'Background' paragraph, a 'Goal' paragraph, a 'Contributing Members' list (UN, OpenGDSteam, US DoD, GeoSDI, OSGeo and GeoForAll), an 'Architecture' section, and a 'Scope' paragraph. On the right side of the page, there are five logos: the United Nations logo, OSGeo, LocationTech, UN-GGIM, and Geoforall.

Home

About

Governance Structure

Spiral I - Geo-Portal

Spiral II - Capacity Building

Spiral III - Geo-Analysis

Spiral IV - Geo-Data Collection

Resources

Events

news

[View All News](#)

UN Open GIS

[Home](#) >> [about](#)

About

Background

With the recent progress on open source software technologies, it was proven that open source geospatial software would be a good alternative option of GIS for the UN. In order to investigate the feasibility of geospatial open source software for the UN and develop solutions with open source software, the UN Open GIS Initiative has been launched in March, 2015 with the supports from several member states and organizations for open source geospatial software.

Goal

The UN Open GIS Initiative aims at identifying and developing open source geospatial solutions that meets the requirements of UN operations, taking full advantage of the expertise of mission partners.


Contributing Members

- UN
- OpenGDSteam
- US DoD
- GeoSDI
- OSGeo and GeoForAll


Architecture

Scope


The scope of the UN Open GIS initiative covers not only the development of geospatial software for the entire lifecycle of geospatial information at enterprise level from data collections, management, and sharing of geospatial data to geospatial analysis and web and mobile geospatial applications for UN operations, but also the capacity building of the UN for the sustainability and eventual technology transfer to other potential user groups.




UN Open GIS INITIATIVE




United Nations




OSGeo



LocationTech



UN-GGIM



Geoforall



UN Open GIS (OSGeo and GeoForAll)

Capacity Building for Spiral 2:

- In 2017 two online courses have been organized and concluded:
 1. GeoAcademy QGIS
 2. Boundless PostGIS
- Total participants: 61 in 2017 and more than 80 in 2018

Courses are organised by Politecnico di Milano using their Educational Platform (Beep) and taught by volunteers (professors and researchers) of GeoForAll.



UN Open GIS (OSGeo and GeoForAll)

OSGeo UN Open GIS Challenge

Proposals for developing open geospatial educational material for three challenges were invited.

Prize money of USD 3,000 for each challenge is sponsored by OSGeo and Boundless.

- 1) **Spiral 1** GeoPortal of UN Open GIS
- 2) **Spiral 3** GeoAnalysis for UN Open GIS
- 3) **Spiral 4** Open geospatial data and software for UN sustainable development goals

The projects are almost at the end. Material will be published soon.



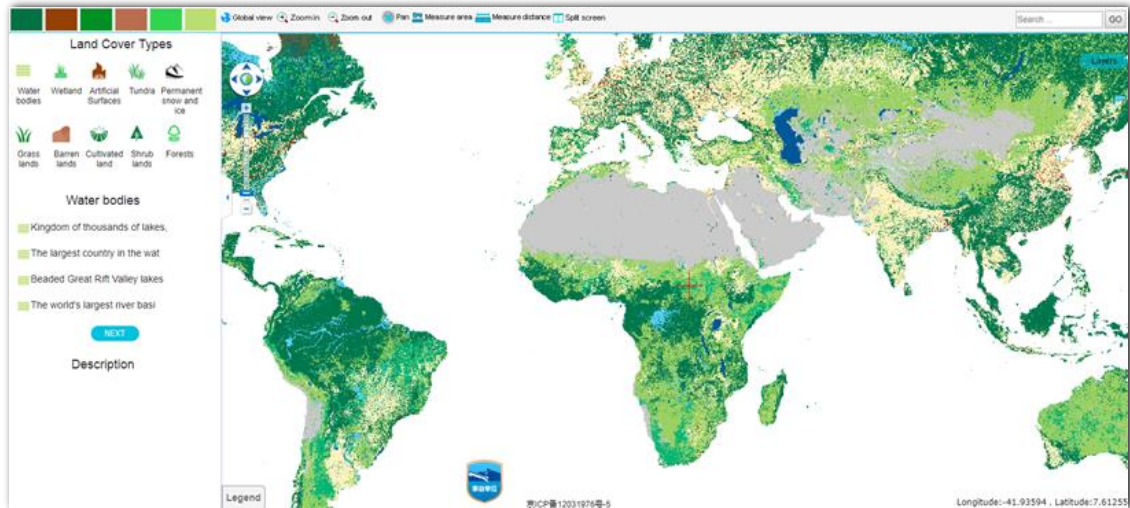
Land Cover Validation Capacity Building (ISPRS)



Capacity Building for High-Resolution Land Cover Intercomparison and Validation (2018)

Funded as one of the ISPRS Education and Capacity Building Initiatives 2018, the project aims to create computer-aided teaching and learning material about the intercomparison/validation of global land cover maps and to organize three workshops, two of which are held in developing countries (Tanzania and Kenya). The training material for validation with QGIS can be downloaded [here](#), and the training material on how to use the [Land Cover Collector](#) application can be downloaded [here](#). Principal investigators are Politecnico di Milano and the National Geomatics Center of China. The development of the Land Cover Collector application was supported by [Italian Ministry of Education, University and Research \(MIUR\)](#) thanks to the URBAN GEO BIG DATA project.

<http://geomobile.com.polimi.it/website/>



Land Cover Validation Capacity Building (ISPRS)



High-Resolution Land Cover Inter-comparison and Validation

Nairobi, 3 September 2018, 9:00-13:00 am
Regional Centre for Mapping of Resources for Development (RCMRD)
Kasarani Road, Off Thika Road
P.O Box 632-00618
Nairobi, Kenya
Room: GIS Training Lab
Speakers: Prof. Chen Jun, Prof. Maria Antonia Brovelli, Mr. Peng Shu, Dr. Marco Minghini
Local Organizers: Mrs. Phoebe Oduor and Kenneth Kasera

High-resolution Land Cover maps are fundamental for many applications such as natural resources management, ecological and hydrological modelling and study of phenomena like soil consumption



High-Resolution Land Cover Intercomparison and Validation

Dar Es Salaam, 1 September 2018, 9:00-13:00 am
World Bank
Room: Room No. 110 First floor, Address (50 Mirambo Street)
Speakers: Prof. Chen Jun, Prof. Maria Antonia Brovelli, Mr. Peng Shu, Dr. Marco Minghini
Local Organizers: Mr. Msilikale Msilanga, Miss. Devotha Laurent



Workshop 2: Capacity Building for High-Resolution Land Cover Intercomparison

High-resolution Land Cover maps are fundamental for many applications such as natural resources management, ecological and hydrological modelling and study of phenomena like soil consumption and deforestation and climate change assessment.

The availability of these global datasets as open data is a great richness everywhere, and especially where these products are not available, but sometimes there are limitations in their usage due to the lack of capacity in managing and processing them. Moreover, there is a need to assess them at the local level to evaluate their accuracy and, more in general, their fitness-for-use.

DESCRIPTION

High-resolution Land Cover maps are fundamental for many applications such as natural resources management, ecological and hydrological modelling and study of phenomena like soil consumption and deforestation and climate change assessment.

The availability of these global datasets as open data is a great richness everywhere, and especially where these products are not available, but sometimes there are limitations in their usage due to the lack of capacity in managing and processing them. Moreover, there is a need to assess them at the local level to evaluate their accuracy and, more in general, their fitness-for-use.

DATE AND TIME

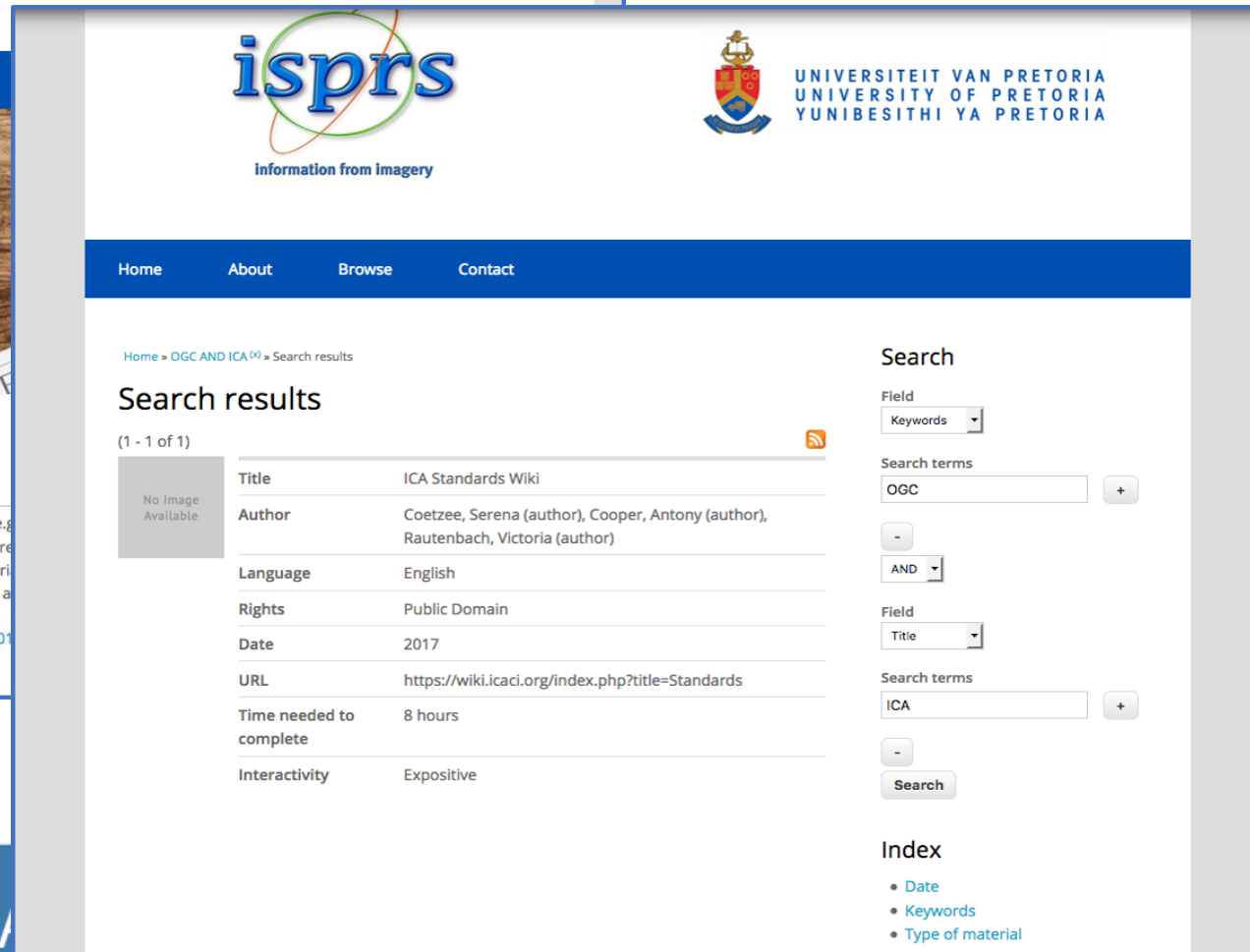
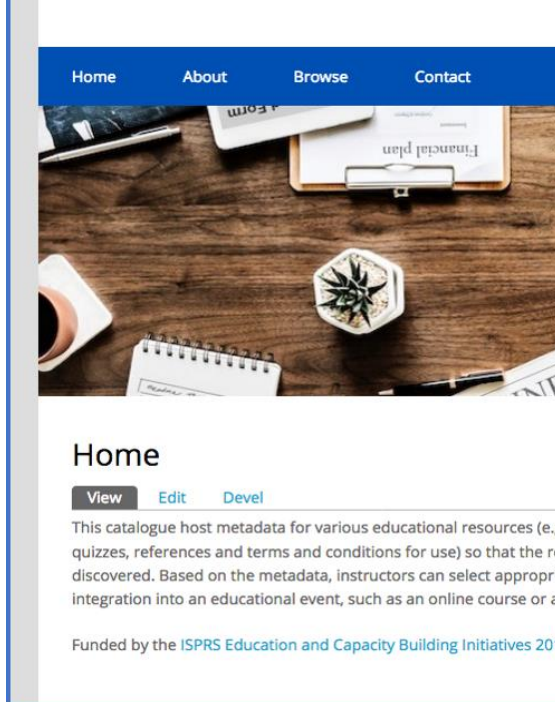
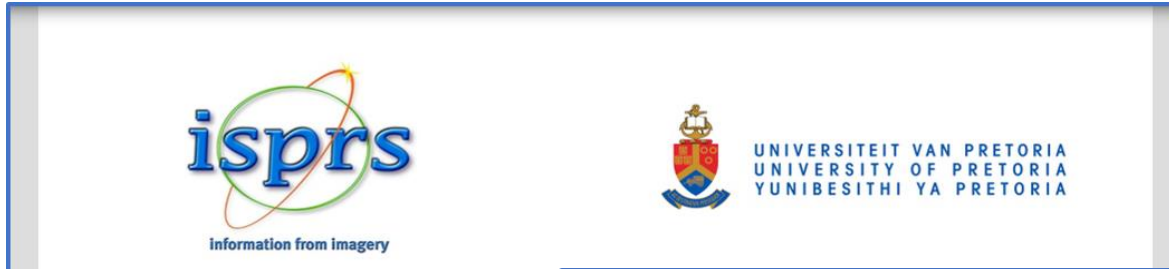
Mon, 1 October 2018
 1:30 pm - 3:00 pm
 Summer Time Not
 Add to Calendar

LOCATION

TU Delft Aula Conf
 5 Mekelweg
 2628 CC Delft
 Netherlands



Educational Repository Material (ISPRS)



Capacity Building is crucial for achieving SDG

Role of Academia in 'geo' is well defined and established – to achieve SDGs:

- Embrace collaboration and sharing of educational resources
- Make use of efficient, tailor-made ad-hoc, education on SDGs and the means to achieve SDGs



Thank you!

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