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# Liaison Report GSDI Association

An update on selected activities  
since WGISS-43

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Liaison, GSDI-WGISS  
Past Secretary-general, HUNAGI (1994-2015)

With Annex on WWEC2017  
prepared by  
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- GSDI at the 10thISDE&Locate17 Conference
- GSDI at the Del Bianco City Smart Conference
- GSDI involvement in the UN 2030 Agenda
  - The GEO EO4SDGS Survey
  - GSDI involvement in country level SGDs action – the case of Hungary
  - Geospatial Information for SDGs
  - EO for SDGs
  - UN GGIM for SDGs
- WWEC2017 Helsinki Conference
- Acknowledgements - Liaison farewell

# GSDI at the 10<sup>th</sup> ISDE & Locate17 Conference

a joint event of ISDE and Australia's geospatial community



Sydney, April, 2017

- On behalf GSDI, MoU of 'Digital Belt and Road' (DBAR) Alliance was signed by ExCom member A. Rajabifard
- He delivered a plenary presentation on UN GGIM's Academic Network
- Further GSDI presentation with co-authors P. Hogan of NASA and Prof M. Brovelli of Politechnico di Milano was given by GSDI's WGISS Liaison
- Follow-on action: visiting GSDI ExCom member Prof. and Director Abbas Rajabifard in his Centre of Spatial Data Infrastructures and Land Administration in the University of Melbourne



DBAR impacts  
65 countries and  
4.3 bn people



ISDE10/Locate17  
Plenary Speakers

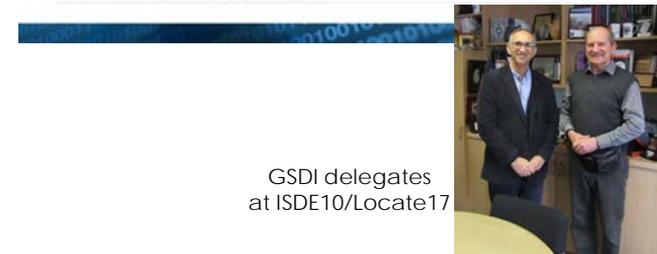
- Chair: Dr Stuart Minchin, Geoscience Australia
- Greg Scott, Inter-Regional Advisor UNGGIM
- Prof. Abbas Rajabifard, Chair
- Denise McKenzie, Vice Chair, Private Sector
- Dr Walter Scott, DigitalGlobe USA
- Dr Peter Woodgate, Australia and New Zealand
- Glenn Cockerton, Spatial Vision
- Prof. GUO Huadong, Institute of Remote Sensing, Chinese Academy of Sciences



STREAM CS01.8 Virtual Globes

TITLE How Open Source Virtual Globe is supporting the SDGs – The Case of NASA World Wind

PRESENTED BY Gabor Remetej-Fülöpp, Member of HUNAGI, ISDE, GSDI and NASA WWEC Scientific Committee



GSDI delegates  
at ISDE10/Locate17

GSDI update in nutshell

Florence, March, 2017

## Del Bianco CitySmart and the Geospatial Community

GABOR REMETIY  
MEMBER OF HUNAGI, MFTTI, MFI, MANT, GSDI, ISDE, NASA WVEC SC

GSDI contribution in Florence

## Del Bianco CitySmart serves the UN Agenda 2030 SDGs and Targets in the Urban Context

|   |  |   |  |   |
|---|--|---|--|---|
| access for all to adequate, safe, affordable, accessible and sustainable housing and basic services   | access to safe, affordable, accessible and sustainable transport systems | participatory, integrated and sustainable human settlement planning | protect and safeguard the world's cultural and natural heritage      | decrease the economic losses caused by disasters, including water-related               |
| ensure special attention to the needs and voices of all people, in particular the poor and vulnerable | access to safe, inclusive and accessible green and public spaces         | strengthening national and regional development planning            | mitigation and adaptation to climate change, resilience to disasters | support well-developed, planned, sustainable and resilient cities and human settlements |

## Del Bianco CitySmart in nutshell

Uniting the World on urban management of global challenges

- ▶ An open, freely available, integrated web-based framework for urban infrastructure management and visualization
- ▶ NASA Web World Wind co-developed with ESA
- ▶ Frontend to backend all open source components
- ▶ CitySmart data and services so far:
  - ▶ Web Map Services
  - ▶ Open Street Maps
  - ▶ 3D buildings + topography
- ▶ Collaboration via open source public repositories



Courtesy of Miguel Del Castillo Hoffman and Gabriele Miltao Lopes

G. Remetiy: Del Bianco CitySmart and the Geospatial Community. 17th International Assembly of the Fondazione Romundo Del Bianco - Life Beyond Tourism/HERITAGE FOR PLANET EARTH 2017. Centro Congressi di Duomo, Florence, 12-13 March, 2017



NASA World Wind Manager Patrick Hogan at the 1<sup>st</sup> FOSS4G Europe Conference

GSDI update in nutshell

# GSDI involvement in the UN 2030 Agenda



*as of August, 2017*

- GSDI response for the recent survey of GEO EO4SDGs Working Group directed by Argyro Kavvada of Booz-Allen&Hamilton at NASA HQ:

| Contributing Organization                             | Member/ PO affiliation   | Organization category      | Type of contribution            | Contribution details | Source of funding   | Value (actual or estimated) |
|---|--|----------------------------|---------------------------------|----------------------|---|-----------------------------|
| Global Spatial Data Infrastructure Association (GSDI) | PO – <a href="https://www.earthobservations.org/pos.php">https://www.earthobservations.org/pos.php</a> | International Organisation | In-kind labour And travel costs | Below the table      | GSDI reserve funds for Strategic Projects and volunteers' in-kind contributions | \$ 5000                     |

- Contribution details: Awareness raising, Engaging stakeholders, Capacity building inc. webinars and workshops, Methodology development, UN-GGIM: multichannel contribution in the UN 2030 Agenda context on country, regional and global level, Sharing best practices (SDI4SDGs, Marine SDI Best Practice, INSPIRE, Global NSDI Index Project, open data, open source), Contribute to CEOS WGISS and GEO plenaries, Support SDGs accomplishment by SDI (i.e.: spatial data, services, applications toward spatial (location) knowledge infrastructure, Small Grants Programme, Multiple Agency Cooperation, Networking



# GSDI involvement in the UN 2030 Agenda

## Geospatial Information for SDGs

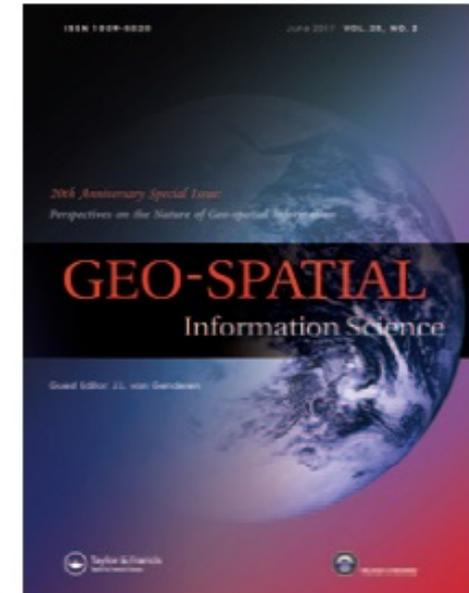
*GEO-SPATIAL Information Science* - special issue: Role of EO/Geospatial data, services and applications in the SDGs

*SD and GI: a strategic framework integrating global policy agenda into national geospatial capabilities*

Greg Scott of GGIM at the UN Statistical Division and Prof. Abbas Rajabifard, ExCom member of **GSDI**, Chair of the Academic Network of GGIM made an in-depth description how the spatial data infrastructure and related technologies could support the monitoring and reporting of SDG indicators and targets in close interagency collaboration.



Greg Scott (top) and Prof. Abbas Rajabifard at the ISDE10/Locate17



Cover page of the GIS guest edited by Prof. John van Genderen)

# GSDI involvement in the UN 2030 Agenda

## EO for SDGs

GSDI is observing member of the EO4SDGS working Group and participates its telecons frequently

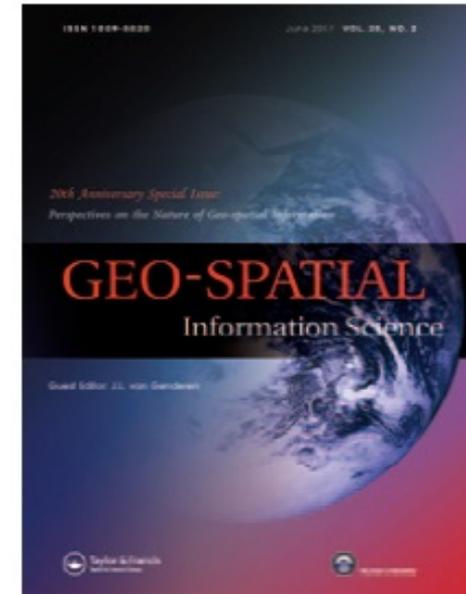
## *Earth observation in service of the 2030 Agenda for Sustainable Development*

In a recent article published in the *Geo-Spatial Information Science* (GSIS) there is a description how the EO data, infrastructure and related services, applications are capable to contribute to the accomplishment of the SDGs from local to global.

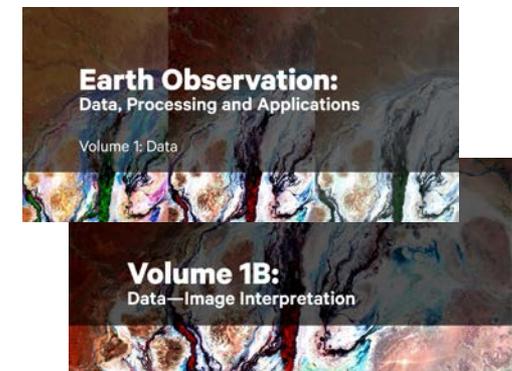
The paper was written by Katherina Anderson, Barbara Ryan, William Sonntag of GEO Sec as well as Argyro Kavvada and Lawrence Friedl of the EO4SDGS team.

These resources are widely distributed  
In frame of the awareness raising actions

GSIS



Awareness raising on  
CRCSI publication:



GSDI update in nutshell

# GSDI involvement in the UN 2030 Agenda

## UN GGIM for SDGs



*July, August, 2017*

- Dave Lovell, president of GSDI Association, Chair of the UN GGIM Geospatial Societies took part on the Workplan/Way Forward Forum organised by the UN GGIM Academic Network in the UN HQ in NYC.
- GIM International interviewed GSDI President Dave Lovell under the title “Maximising the Benefit of Geospatial Information”
- Former GSDI President Abbas Rajabifard chair of the strategic knowledge, research and training arm of UN GGIM moderated the Forum’s session devoted to SDGs’ major drivers, opportunities and challenges
- In the Enablement and Requirements session Prof. Harlan Onsrud, former Executive Director of GSDI highlighted the legal and policy requirements

# WVEC2017 Helsinki Conference

## The 5<sup>th</sup> NASA Europa Challenge

*Espoo, August 28-31, 2017*

- Hosted by the Digital Forum of Finland at the Aalto University and Nokia.
- 12 of 21 teams were present
- 1<sup>st</sup> price: [World Weather](#) and [AgroSphere](#)
- Best support teams as rated by all other teams were also awarded
- OSGeo (Suchith Anand) and GSDI (G.Remetey) submitted the special Award offered by GODAN for two winners:
  - [AgroSphere](#) climate change impact analysis and [Aware](#) Algorithmic Wildfire Analysis and pREdiction
- The participants visited nanosat labs (SAR and hyperspectral constellation) as start-up companies and technology-business-design based innovation clubs. After the mentor- guided workshop a high level conference forum provided frame for the award ceremony.

Open source, virtual globe based application developments



# Acknowledgements

- Special thanks to Viktor Pusztai who invited HUNAGI and me to co-organise the WGISS-23 and CVWG Meeting in Budapest and Prof. Harlan Onsrud, Ivan Petiteville and Ken McDonalds for their GSDI-CEOS WGISS liaison initiative, which I tried to serve doing my best in the past 12 years.
- Since Spring 2006 I participated 16 WGISS Meeting and contributed 4 times remotely. I reported for HUNAGI and GSDI also using a frequently visited [blog](#).
- My appreciation to Co-Chairs of WGISS, the Presidents, former Executive Director and present Secretary General of GSDI Association for their support and encouragements to keep the GSDI-CEOS WGISS link live and useful. This community is really close to my hearth and I learned a lot.



Image sources: NASA , ESA ESRIN and Internet

**Thank you for your cooperation !**

Thank you for your attention!

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# WorldWind Europa Challenge 2017

Finalist Projects

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# Aims

- Academic event
- 5th year of the Challenge
- Open Source Web Applications
- Particular community needs for each team
- Urban livability
- Sharing solutions



# City Smart World Wise (6th place)

- Urban infrastructure visualization for an entire community (city of Kodiak, Alaska)
- Renewable energy, water purification and treatment, agricultural development,
- Community resource mapping (health, amenities, education, transportation, emergencies, etc.)

Layer Menu

Wind Energy

-KHS Wind Turbine

-KEA Wind Turbine

Energy Distribution

-Kodiak Overhead Cables and Poles

-Kodiak Terror Lake Powerhouse Transmission Lines

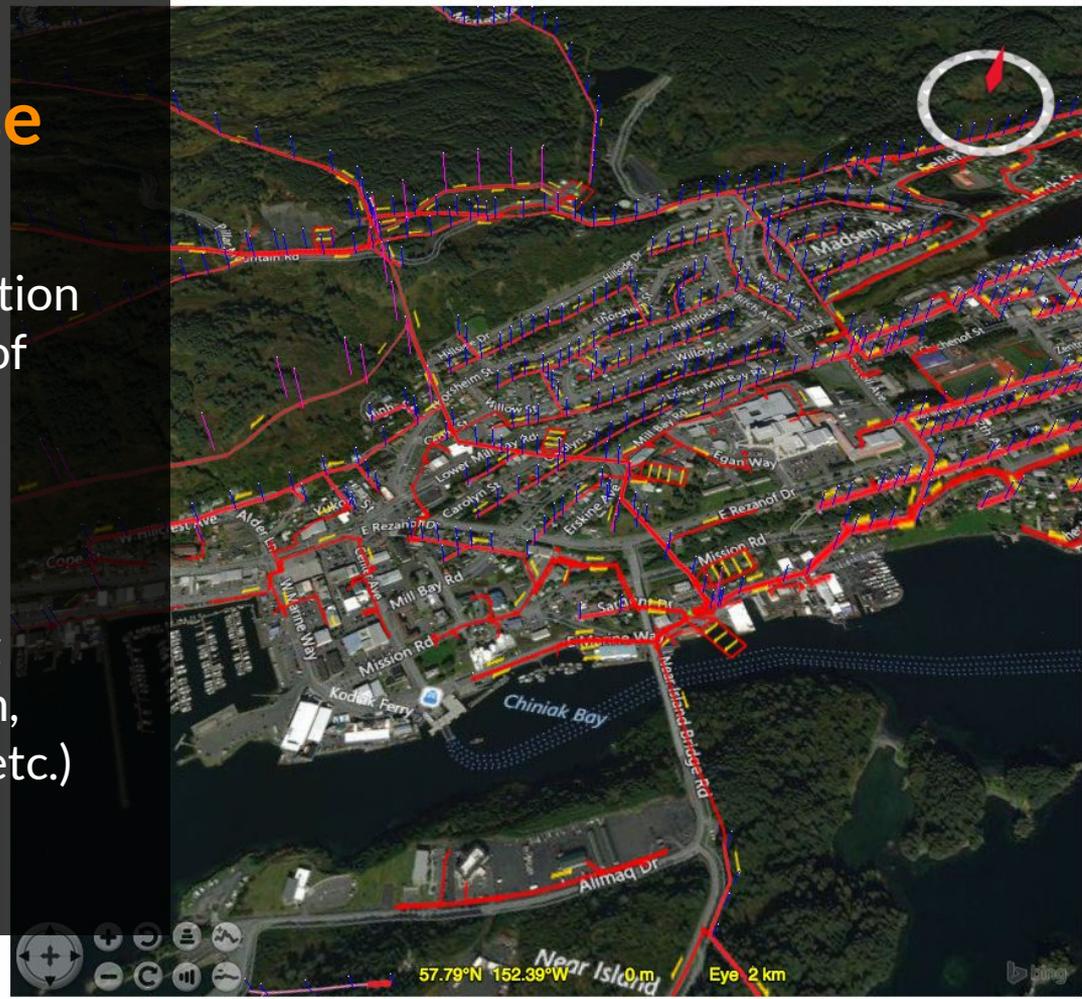
-Kodiak Large Transformers

-Kodiak Small Transformers

-Kodiak Substations

-Kodiak Fuses

-Kodiak Poles With Guy Cable



Add OSM using tags.

Add OSM buildings.



Color

Select the color:

rgba(187,0,88,1)

Extrude

Set the height in meters for all the buildings.

altitude in meters

Use OSM height

- Provides Web WorldWind with capabilities to seamlessly consume any type of OSM data

Use a property that exists in the data

a property name

- 3D buildings, points of interest, lines, polygons.

Heatmap

Enter the minimum

0, 15, 30, 40, 60

- Enhances 3D rendering performance compared to Web WorldWind primitives

How?

Click twice on the globe to set the bounding box

Upload a GeoJSON file

Browse...

Go!



Eye 2 km

# Smart Pollen Monitoring (4th place)

- Tool for people with allergies
- Pollen dispersion analysis
- Based on the time of the year, wind direction, and tree species
- Statistical information visualization tools

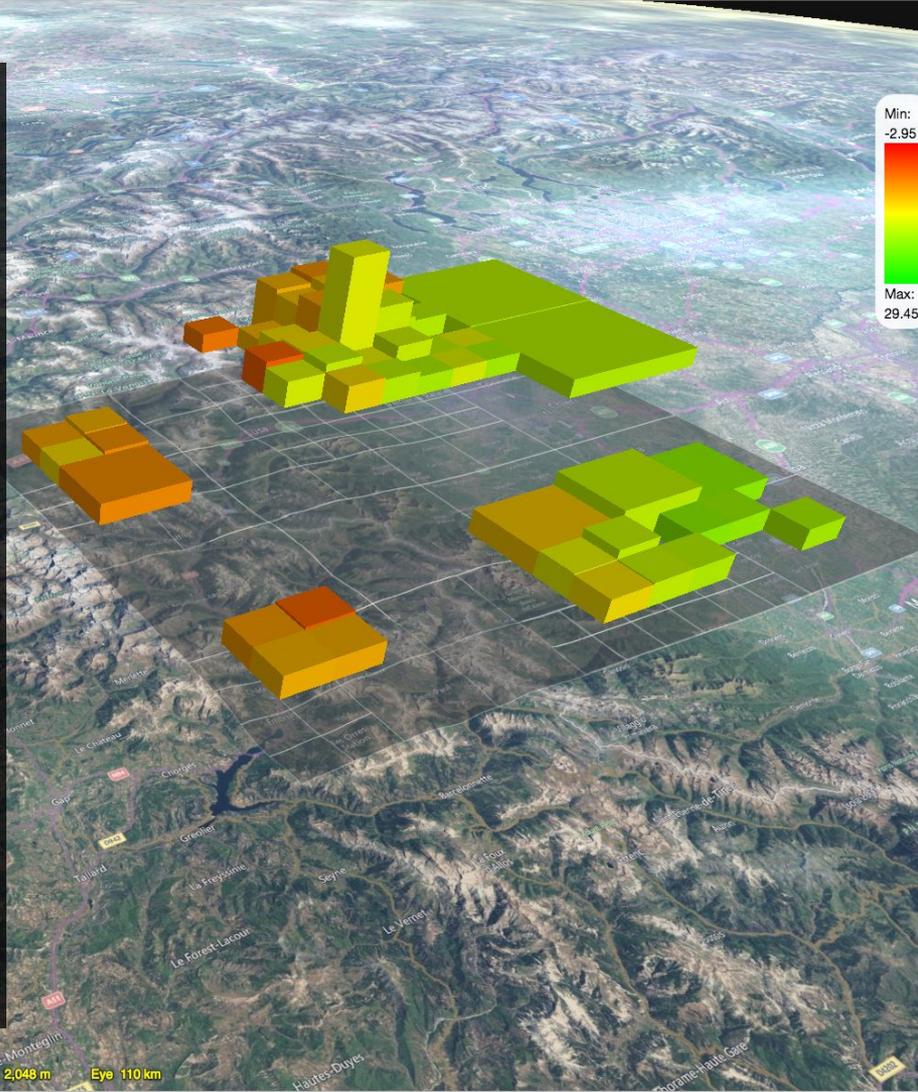




# MuViAS (2nd place)

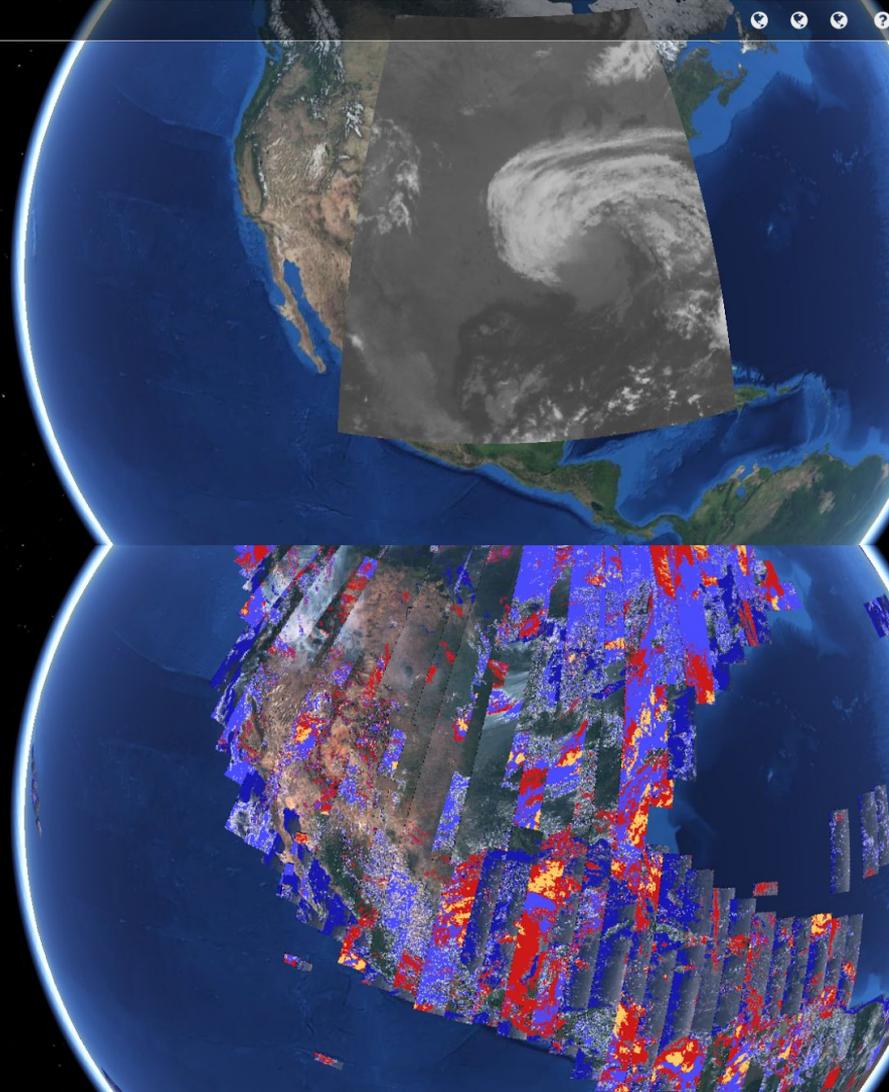
(Multidimensional Visualization and Analysis Suite)

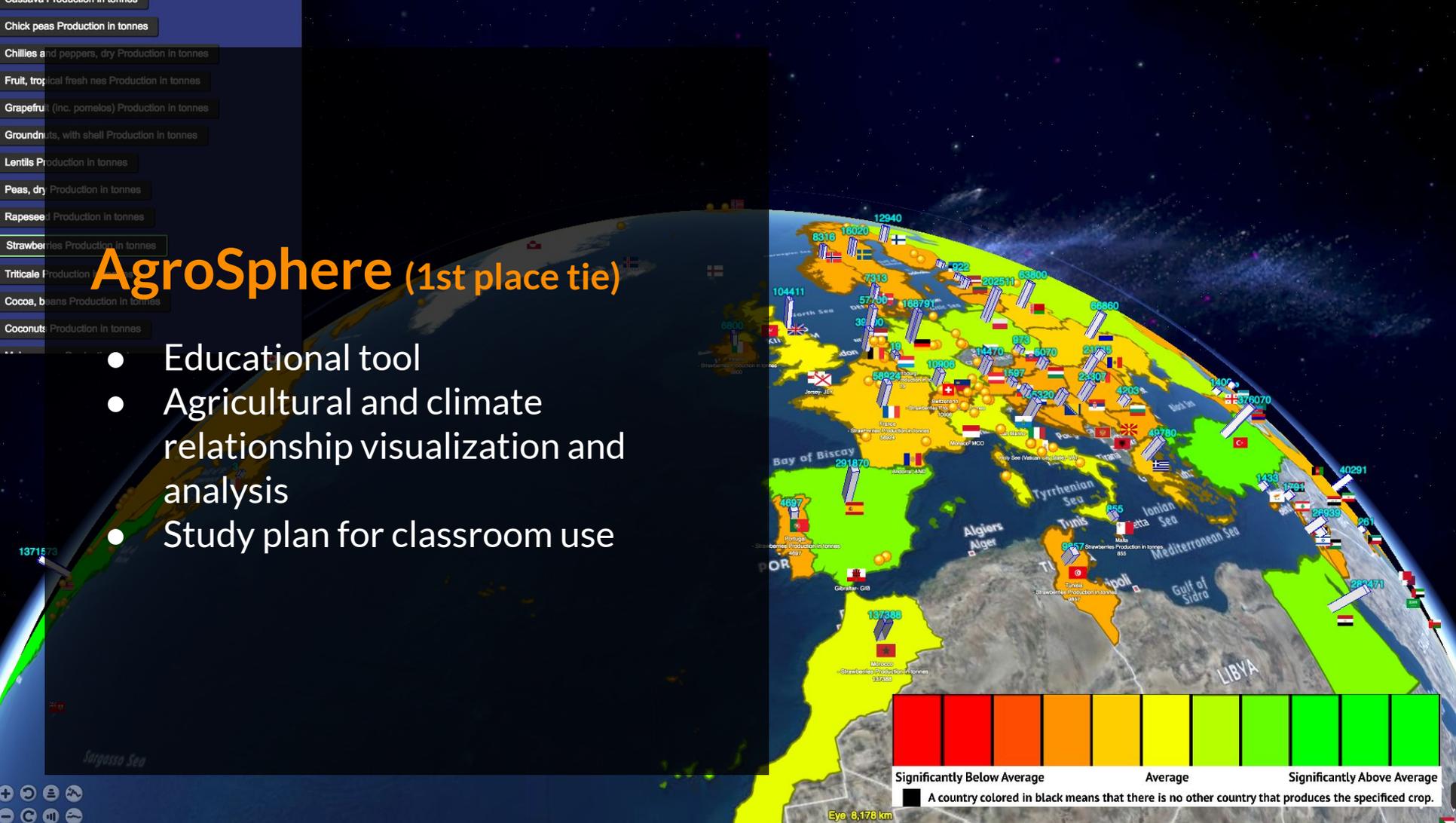
- Takes advantage of 3D capabilities of Web WorldWind to visualize any type of multidimensional data
- Provides developers with a suite of dynamic voxel-based data visualization tools for their apps
- Condenses lots of information in a single screen-space



## WorldWeather (1st place tie)

- Climatological and weather data visualization and comparison
- Combines satellite imagery from widely different sources (NASA, ESA, DLR, etc.)
- Provides tools for browsing unrelated satellite imagery datasets simultaneously (legends, timeseries, overlapping, etc.)





Chick peas Production in tonnes

Chillies and peppers, dry Production in tonnes

Fruit, tropical fresh nes Production in tonnes

Grapesfruit (inc. pomelos) Production in tonnes

Groundnuts, with shell Production in tonnes

Lentils Production in tonnes

Peas, dry Production in tonnes

Rapeseed Production in tonnes

Strawberries Production in tonnes

Triticale Production in tonnes

Cocoa, beans Production in tonnes

Coconuts Production in tonnes

# AgroSphere (1st place tie)

- Educational tool
- Agricultural and climate relationship visualization and analysis
- Study plan for classroom use

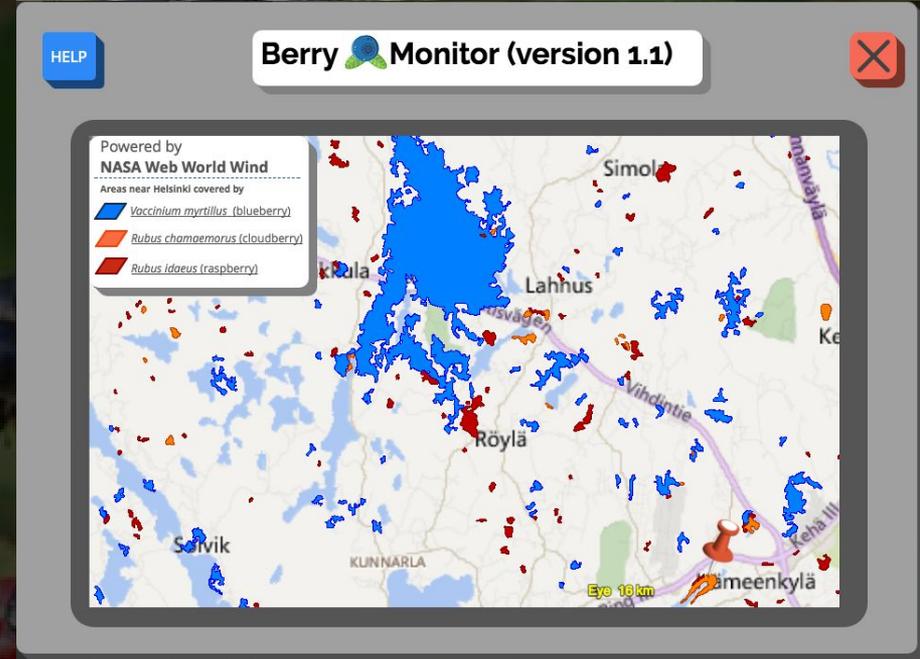


■ A country colored in black means that there is no other country that produces the specified crop.

Eye 8,178 km

# Berry Monitor (Miguel's honorific mention)

- GIS wild berry monitoring



WorldWind  
EUROPA CHALLENGE  
HELSINKI 2017



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# Resources

## **WorldWind Europa Challenge 2017 Website:**

<http://eurochallenge.como.polimi.it/projects2017>

## **City Smart World Wise:**

<http://eval.cs.aworldbridgelabs.com/>

## **3D OpenStreetMap:**

<http://osm.eoapps.eu/>

## **Smart Pollen Monitoring:**

<http://smartpollenmonitor.org/>

## **AWARE:**

<http://wildfireaware.co.uk/>

## **Berry Monitor:**

<https://www.berrymonitor.com/>

## **WorldWeather:**

<https://github.com/NASAWorldWindResearch/WorldWeather/wiki>

## **AgroSphere:**

<https://github.com/NASAWorldWindResearch/AgroSphere/wiki>

## **MuViAS:**

<http://muvias.eoapps.eu/>