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Introduction: collaborative custodianship

Presented by Serena Coetzee

Centre for Geoinformation Science, University of Pretoria, South Africa

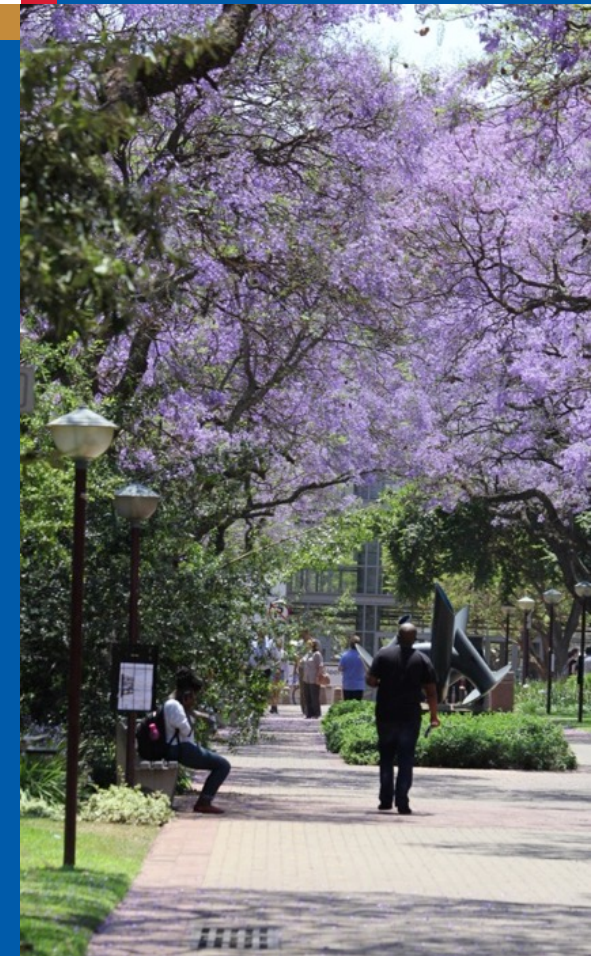
Chair: ICA Commission on SDI & Standards

Joint ICA Commission Workshop:

Collaborative custodianship through collaborative cloud mapping –
Challenges and opportunities

University of Pretoria, 14 September 2018

Make today matter





International Cartographic Association
Association Cartographique Internationale

www.icaci.org

To promote the
disciplines and professions of
Cartography and GIScience
in an international context



ICC 2019
TOKYO
Mapping Everything for Everyone

29th

International Cartographic Conference
15th-20th July 2019

National Museum of Emerging Science and
Innovation (Miraikan) & Tokyo International Exchange Center* TBD

<http://www.icc2019.org/>

ICA Commission on SDI & Standards

SDIs:

What is the impact and use of cartography, **standards**, spatial semantics, ontologies, volunteered geographical information (VGI), data quality, virtual globes and other technological developments?

Research, Education, Publications

- With other ICA Commissions
- With other organizations, e.g. ISO/TC 211, OGC, EuroGeographics...
- Reports, conference papers, journal articles, educational material

Register on the Commission website to get notifications

<http://sdistandards.icaci.org/>



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Franz-Josef Behr

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Standards
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Commission Chairs

ICA Commission on SDI & Standards



Selected publications

- **SDI-Open**
 - With ICA Commission on Open Source Geospatial Technologies
 - SDI-Open 2015 proceedings
 - SDI-Open 2017 presentations
- **Academic SDI**
 - The Academic SDI – Towards understanding spatial data infrastructures for research and education
 - SDI implementations at universities and research institutes
- **SDI model**
 - A spatial data infrastructure model from the computational viewpoint
 - Extending the formal model of a spatial data infrastructure to include volunteered geographical information
 - An initial formal model for spatial data infrastructures
- **Standards**
 - Standards Wiki
 - World of spatial metadata standards (book)
 - Spatial Database Transfer Standards: Current International Status (book)

<https://sdistandards.icaci.org/resources/>

An infrastructure is...

the *fundamental facilities and systems*
serving a
country, city, or area

www.dictionary.com

the *basic facilities, services and installations*
needed for the functioning of
a community or society

www.wiktionary.org

the *basic, underlying framework or features*
of a system or organization

www.dictionary.com



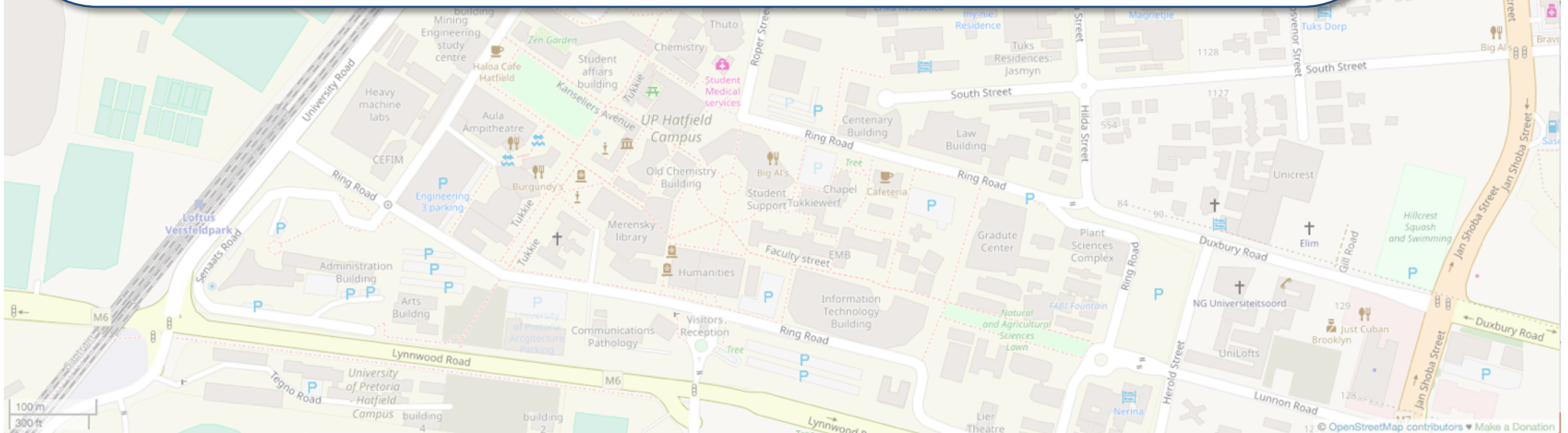
<http://www.cbase-ng.com/services/telecoms/>, <http://bahuvida.com/Business-Divisions/Infrastructure/Electrical/>, <http://www.unece.org/>, <http://kclr96fm.com/>



A spatial data infrastructure is...

the fundamental facilities, services, systems and installations that provide
a country, city or area
with **spatial data**
required for the functioning of society

Based on www.dictionary.com, www.wiktionary.org



By definition, all infrastructures strive for invisibility

*Users are interested in ... **useful services** ...
rather than in ... system abstractions ...
that make these services possible.*

[Blanchette, 2012]



www.google.co.za, www.stuff.co.nz, pauljenkins.tv/blog/sydney-and-light-switches/, environment.nationalgeographic.com/environment/photos/drinking-water/

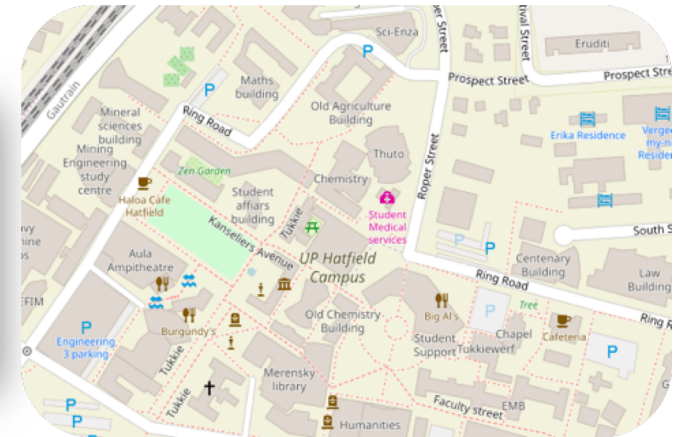


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[Blanchette, 2012]



A spatial data infrastructure
should **strive for invisibility**
so that users can...

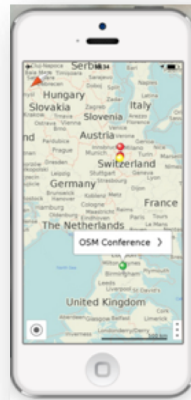
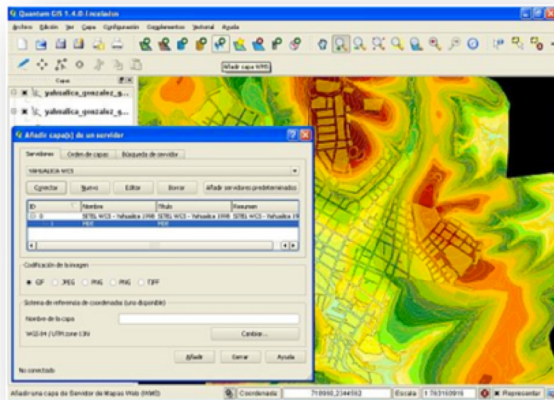
find spatial data
access spatial data
use spatial data



www.maponshirt.com



<http://www.campusgifts.co.uk>



www.qgis.org, <http://maps.me/en/home>, <http://www.mz.govt.nz>, www.bethink.com



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To realize a spatial data infrastructure...

...someone has to produce and
maintain the spatial data...

Custodianship

Definitions

- **custodian** (SDI Act No 54 of 2003)
 - organ of state that captures, maintains, manages, integrates, distributes or uses spatial information

- **custodian** (dictionary.com)
 - a person who has custody; keeper; guardian
 - a person entrusted with guarding or maintaining a property; janitor

Custodianship

Better definition?

- custodian
 - organ of state entrusted with guarding or maintaining a(n authoritative) spatial dataset

Custodianship

organ of state entrusted with guarding or maintaining spatial dataset

Very often, organizations have to collaborate to produce and maintain a spatial dataset...

Collaborative custodianship

Definition

- when organizations entrusted with guarding or maintaining a spatial dataset collaborate to achieve this

Examples from SDIs

South African SDI

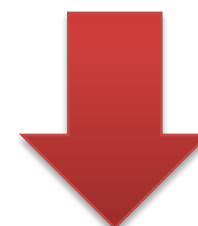
SDI Act (No 54 of 2003)

Collaborative maintenance

16(1) Data custodians may exchange spatial information in terms of a *collaborative maintenance agreement* providing for regular updating of base data sets within an agreed period.

...

South African SDI

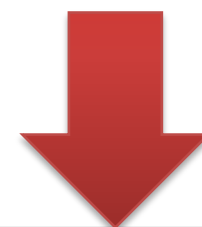


List of proposed Base Dataset Coordinators and Custodians

(As per the study conducted by the CSI Data Subcommittee in 2012)

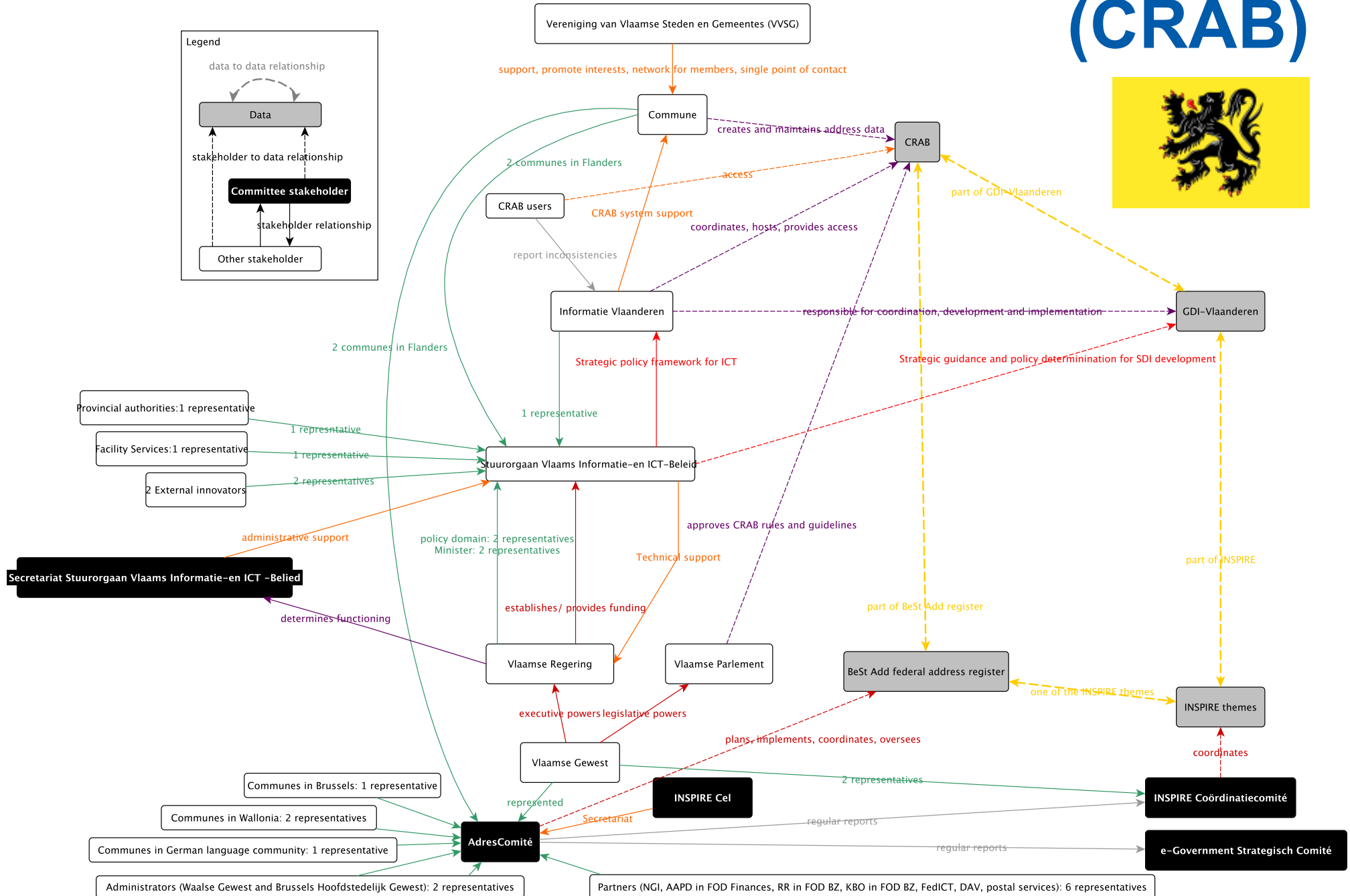
| Theme | Dataset | Custodian | Recommended Base Dataset Coordinator |
|---------------------------|-----------------------------------|---|---|
| Administrative Boundaries | National Boundaries | Municipal Demarcation Board | Municipal Demarcation Board (MDB) info@demarcation.org.za Tel: +27 12 342 2481/2 www.demarcation.org.za |
| | Provincial Boundaries | Municipal Demarcation Board | |
| | District Municipality | Municipal Demarcation Board | |
| | Local Municipality | Municipal Demarcation Board | |
| | Metropolitan Municipality | Municipal Demarcation Board | |
| | Magisterial districts | Department of Justice | |
| | Voting districts | Independent Electoral Commission (IEC) | |
| | Wards | Municipal Demarcation Board | |
| | Traditional Boundaries | Provincial Department of Traditional Affairs | |
| | Tribal Authorities | Department of Traditional Affairs | |
| Imagery | Aerial photography (0.35m - 0.5m) | National Geo-spatial Information (NGI) | National Geo-spatial Information (NGI), Department of Rural Development and Land Reform (DRDLR) www.ngi.gov.za Tel: +27 21 658 4302 |
| | Satellite Imagery | South African National Space Agency (SANSA) | |
| Roads | National | National Geo-spatial Information (NGI) South African National Roads Agency Limited (SANRAL) National Roads Agency (NRA) | Department of Transport (DOT) Tel: +27 12 309 3657 www.transport.gov.za |
| | Main, Secondary, other | National Geo-spatial Information (NGI) Provincial Government Local Authorities | |
| | Streets | Provincial Government Local Authorities | |
| Social Statistics | Place name | Statistics South Africa (Stats SA) National Geo-spatial Information (NGI) Provincial Government Local Authorities SA Geographic Names Council | Statistics South Africa (Stats SA) info@statssa.gov.za Tel: +27 12 310 8600 http://beta2.statssa.gov.za |
| | Enumeration Areas | Stats SA | |
| | Small areas | Stats SA | |
| | Dwelling frame | Stats SA Eskom Department of Water and Sanitation (DWS) | |

South African SDI



| Theme | Dataset | Custodian | Recommended Base Dataset Coordinator |
|--------------------|--|--|---|
| Land use | Land use | National Geo-spatial Information (NGI) National department Provincial Government Local Authorities | National Geo-spatial Information ((NGI)), Department of Rural Development and Land Reform (DRDLR) Tel: +27 21 658 4302 www.ngi.gov.za |
| Land Cover | Land Cover | National Geo-spatial Information (NGI) National department Provincial Government Local Authorities | |
| Cadastre | Land parcel boundaries | Chief Surveyor General (CSG) Provincial Surveyors General Department of Agriculture Forestry and Fisheries (DAFF) Local Authorities | Chief Surveyor General (CSG) Tel: +27 12 326 8050 www.csq.dla.gov.za |
| | Deeds register attributes | Deeds Office | |
| Hydrology | Water courses streams and rivers | Department of Water and Sanitation (DWS) National Geo-spatial Information (NGI) Local Authorities Catchment Management Agencies (CMA) | Department of Water and Sanitation (DWS) Tel: +27 12 336 8387 www.dwa.gov.za/default.aspx |
| | Drainage networks catchments | Department of Water and Sanitation (DWS) | |
| | Water bodies (e.g. dams, lakes) | Department of Water and Sanitation (DWS) National Geo-spatial Information (NGI) Local Authorities Catchment Management Agencies (CMA) | |
| | Water resources: boreholes groundwater | Department of Water and Sanitation (DWS) Catchment Management Agencies (CMA) | |
| Geodesy | Trigonometrical Beacons | National Geo-spatial Information (NGI) | National Geo-spatial Information (NGI), Department of Rural Development and Land Reform (DRDLR) Tel: +27 21 658 4302 www.ngi.gov.za |
| | Town Survey Mark Schemes | National Geo-spatial Information (NGI) Local Authorities | |
| | Benchmarks | National Geo-spatial Information (NGI) Local Authorities | |
| | TrigNet GNSS Base station network | National Geo-spatial Information (NGI) | |
| | Geoid Model | National Geo-spatial Information (NGI) | |
| Conservation Areas | Conservation Areas and Protected areas | Department of Environmental Affairs (DEA) Provincial Government Local Authorities | Department of Environmental Affairs (DEA) callcentre@environment.gov.za Tel: +27 86 111 2468 Tel: +27 12 310 3911 www.environment.gov.za |

Centraal Referentieadressenbestand (CRAB)



This workshop

Can collaborative cloud mapping
contribute to / facilitate / realize
collaborative custodianship?

Thank You



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