

2015 Esri User Conference (UC)

July 20-24, 2015 | San Diego Convention Center

Geoportal IGC

The geographic technology applied to land management

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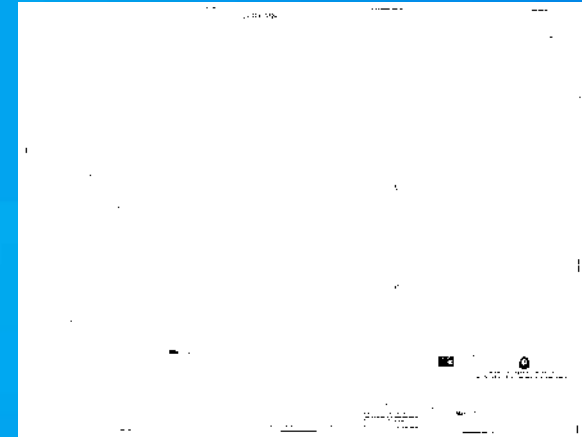
- Founded in 1886 as the Geographic and Geologic Commission
- Responsible for cartographic base data, thematic mapping and municipal boundaries
- Cartographic collection composed by:
 - XIX century-old state maps
 - Vertical and oblique imagery from 1939, 1954, 1962 and 1972
 - Topographic maps at 1:10.000 scale made from 1978 until 2006



State map from 1891



*Oblique image from São Paulo
taken in 1939*



*10:000 scale
topographic map*

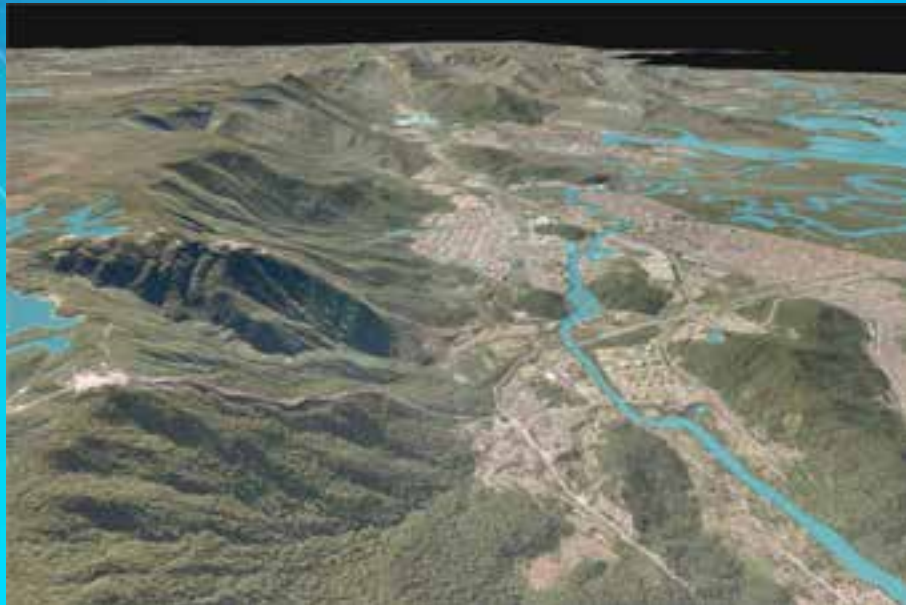
IGC work area – São Paulo state (Brazil)



- **Area: 248,600 km² (3% of Brazil) (slightly larger than the UK)**
- **Population 2014: 42,673,386 (21% of Brazil)**
- **GDP 2012: US\$690 billion (31% of Brazil)**

Current mapping project at 1:25.000 scale

- Started in 2010
- More than US\$10 million invested until 2015
- Divided into stages:
 - I. High resolution aerial imagery collection
 - II. Geospatial data generation (hydrography, DTM, orthoimagery RGB and Infrared)
 - III. New topographic maps



Investments in new equipment



GNSS/RTK receiver



Planetary scanner



Photogrammetric workstation



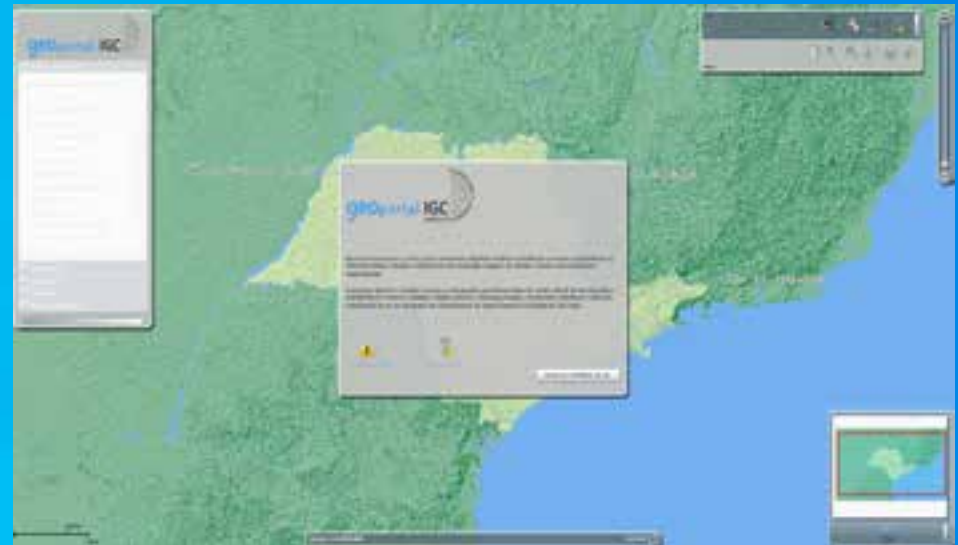
Drones



Absolute gravimeter

IGC Geoportal (www.igc.sp.gov.br/geoportal)

- ArcGIS for Desktop for data validation and publishing
- ArcGIS for Server for deploying data internally and externally
 - Dynamic map services
 - Cached image services
- Oracle Spatial with up to 150TB of storage capacity
- OGC standards compliance (WMS, WFS services)



Geoportal home screen

IGC Geoportal – Available content

- Mosaics of scanned topographic maps and orthoimagery
- Georeferenced historic maps
- Vector data comprising hydrographic, relief and road features

Orthoimagery and hydrography *High resolution orthoimagery* *Topographic map from 1930*

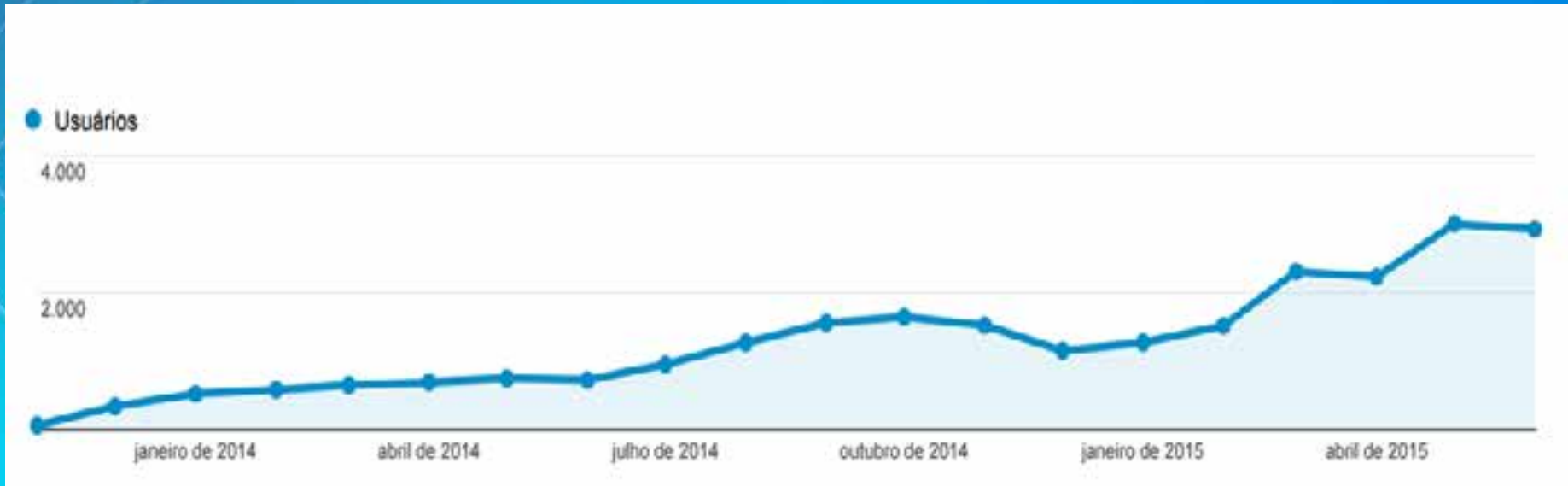


10:000 topographic maps mosaic

Vertical imagery from 1954

IGC Geoportal – Access statistics

- Almost 3,000 users/month and 220 users/weekday as of June 2015
- Approx. 55,000 sessions and 20,000 users since the Geoportal release on November 2013



Graph of monthly users since Geoportal release (by Google Analytics)

Goals reached

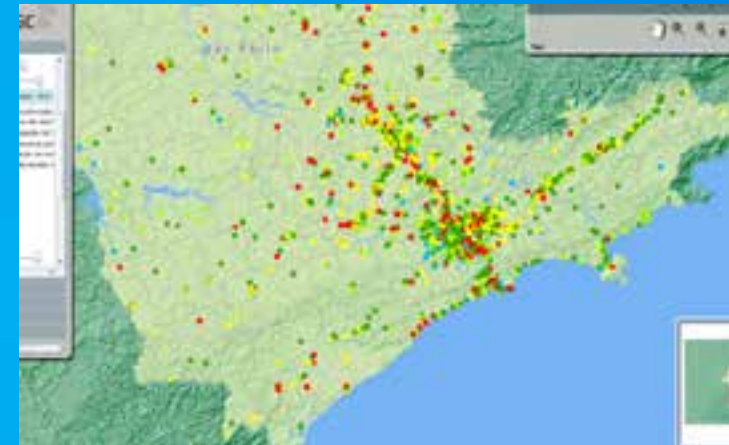
- Standardization of cartographic data for Brazilian National SDI compliance
- Easy and open online access to spatial data
- Interoperability with other state agencies through web services
- Improvement in internal work processes
- Faster responses to citizens and companies requests on boundaries location reports and water courses delineation

GEOPORTAL.GEOPORTAL2006	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006J1	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006J14	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006J2	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006J8	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006CONTROLE	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006CONTROLE	SDI Feature Dataset
GEOPORTAL.GEOPORTAL2006CONTROLE	SDI Feature Dataset
GEOPORTAL.AREA_INTERESSADO_ATTACH	SDI Table
GEOPORTAL.AREA_INTERESSADO_ATTACH_HML	SDI Relationship Class
GEOPORTAL.Dimensao_Dimensao_RA	SDI Table
GEOPORTAL.Dimensao_Programas	SDI Table
GEOPORTAL.Estabelecimentos_Saude	SDI Table
GEOPORTAL.InstituicoesVinculoes_Saude	SDI Table
GEOPORTAL.InstituicoesSA_Saude	SDI Table
GEOPORTAL.InstituicoesIP_Municipio	SDI Table
GEOPORTAL.InstituicoesIP_Cursos	SDI Table
GEOPORTAL.InstituicoesIP_Cursos_RA	SDI Table
GEOPORTAL.PONTO_HISTORIA_ATTACH	SDI Table
GEOPORTAL.PONTO_HISTORIA_ATTACH_HML	SDI Relationship Class
GEOPORTAL.PONTO_ESTRUTURANTE_ATTACH	SDI Table
GEOPORTAL.PONTO_ESTRUTURANTE_ATTACH_HML	SDI Relationship Class
GEOPORTAL.TABELA_CONTROLE	SDI Table

SDE Geodatabase Schema



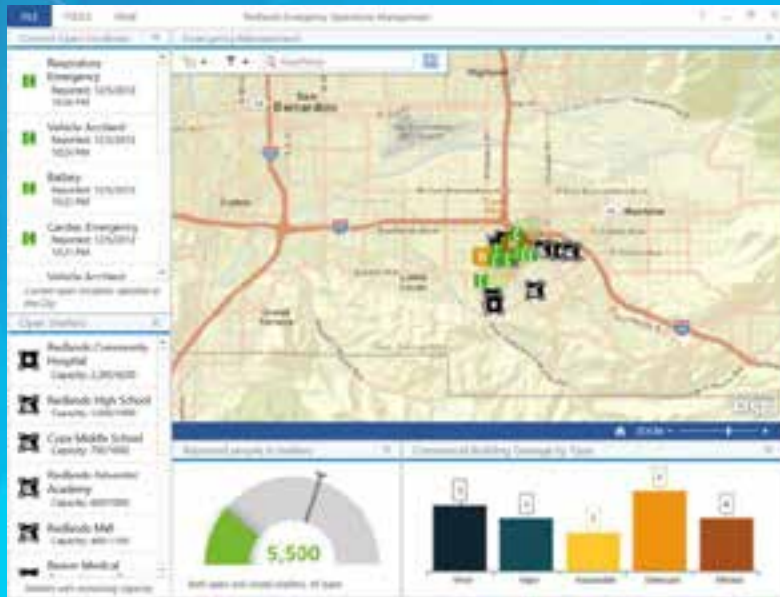
Technical report layout built in ArcMap with synced data frames



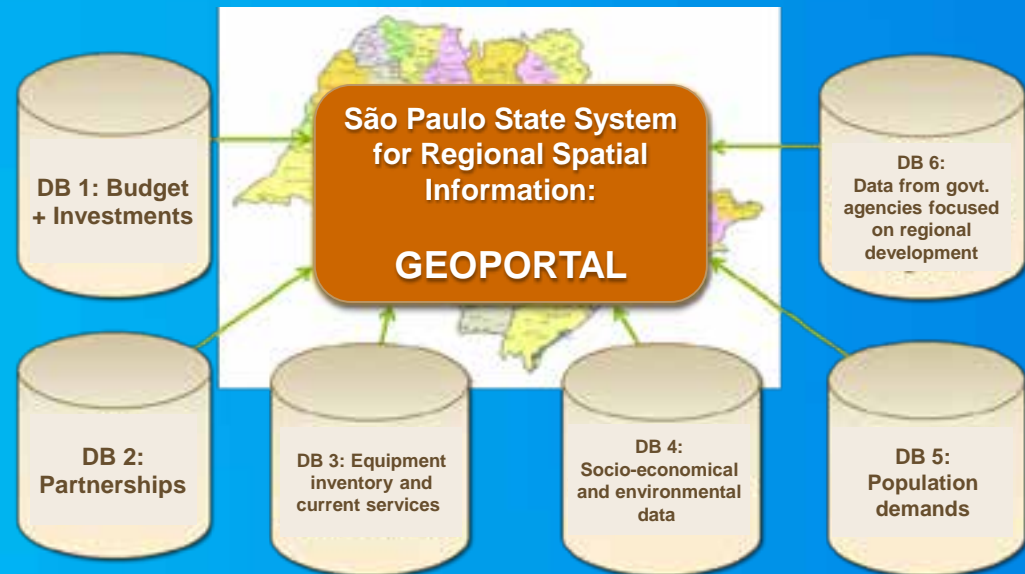
WMS services from other state agencies

Next steps and challenges to be addressed

- Metadata server implementation
- Dashboard solutions to improve decision making for state officials
- Spatial Analysis tools for regular and specialized users
- State SDI consolidation with more agencies encouraged to make spatial data accessible



Operations dashboard by Esri



Thank you!



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www.igc.sp.gov.br

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