

FIG

FIG WORKING WEEK 2017

Helsinki Finland

29 May - 2 June 2017

*Presented at the FIG Working Week 2017,
May 29 - June 2, 2017 in Helsinki, Finland*



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From digitalisation to augmented reality

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Combining Geomatics Technology for Successful Land Development Projects

Stephanie Michaud, P.Eng. Trimble Land Administration, Canada



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WHY IS THE RIGHT TECHNOLOGY SO IMPORTANT IN LAND ADMINISTRATION?

- Land is the foundation for many socio-economic benefits
- Multiple teams, organizations, and governments are often involved in land projects
- Data is often limited or partial in regions of interest
- Unique restrictions and limitations persist





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WHAT TYPE OF DATA IS NEEDED?

FIELD

- Geodetic Control
- Data collection
- GIS attribution
- Verification



OFFICE

- Data Processing
- Decision Making
- Formal Titling
- Valuation





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COMMON DATA COLLECTION PROJECTS

- Multi-Purpose, or Fit-for-Purpose Cadastre
- Census and Statistics Review
- Validation and Assessments
- Property Tax and Valuation
- Community Involvement



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COMMON PROJECT DEMANDS

- Multi-platform support
 - Mobile, tablet, office, manufacturer, etc.
- Various background data/imagery sources
 - Orthophotos, JPEG, SHP, DXF
- Transitioning from Pen and Paper workflows
- Diverse staff and teams for project
 - Survey, Mapping, Census, Planning, Government, etc.



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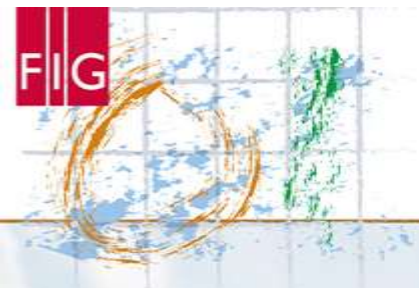


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OVEJAS REGION IN COLOMBIA

- Remote and rural multipurpose-cadastral project
- Census and statistical data collected for planning
- Combination of survey and mapping grade receivers
- Communal approach to collected data
- Utilizing existing aerial imagery, orthophotos, and older parcel data
- Goal of mapping the entire region, and providing formal titles to residents
- Configuration of local base stations for RTK, RTX being piloted for remote areas



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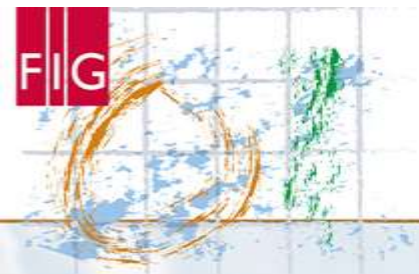


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MUNICIPALITY OF HERMOSILLO, MEXICO

- Municipal-wide project for tracking building construction and valuation, including taxation
- Current field teams cannot keep up with new construction
- Moving from paper forms and tape measures to tablets and GNSS
- Using RTX satellite corrections, GNSS and rangefinders
- Goal: validate new buildings and begin verifying modifications



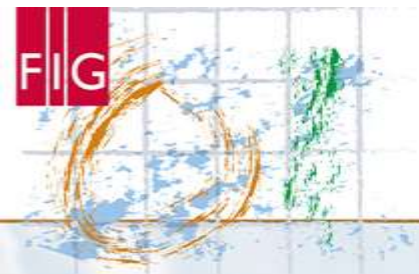


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MULTI-PLATFORM FLEXIBILITY

- Project can use existing inventory and add new equipment
- Teams can choose the equipment that suits the needs of the project (accuracy, rugged, form factor)
- Software training is consistent across the entire team
- Survey, Mapping and GIS workflows can be accommodated



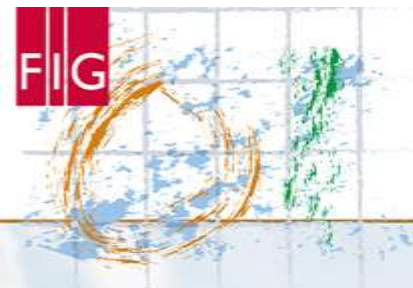


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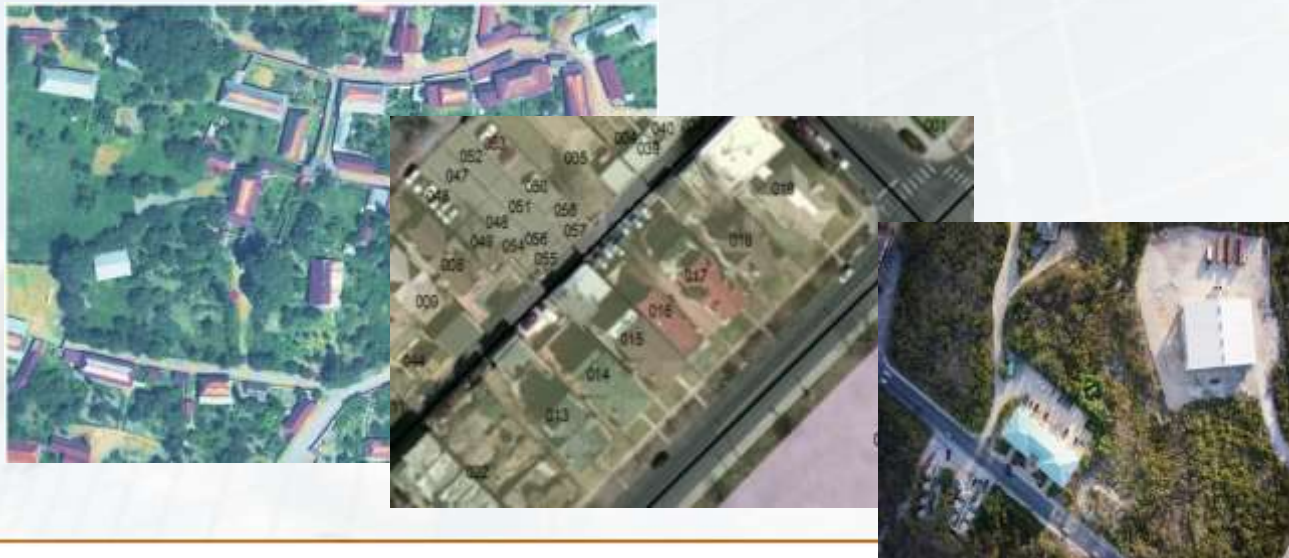
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BACKGROUND IMAGERY AND DATA

- Import data from various sources and formats
- Display and layer in tiles, or MapPacks for ease of use
- Manipulate, edit, and draw directly on the map
- Provide context and historical information during data collection process



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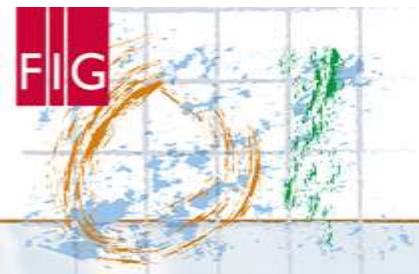


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PEN AND PAPER TO DIGITAL WORKFLOWS

- Visual and gesture-based workflows
- Ability to customize GIS attribute system to match paper-based forms
- Sketch and drawing capability for geometric attributes (point, line, area)
- No prior surveying experience required to learn how to collect data

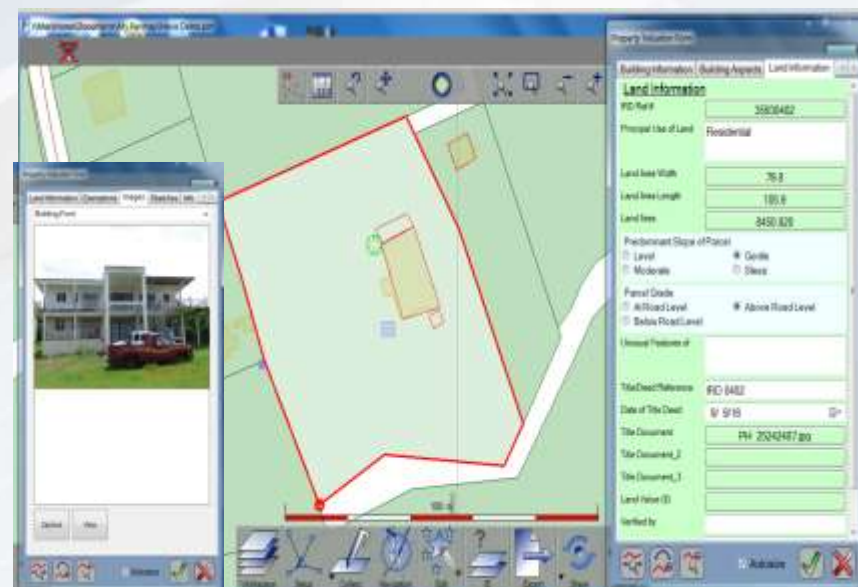




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RESULTS

- Real time and digital data collection reduces office post-processing and verification time by 80%
- Consistency and repeatability of results and procedures
- 50% reduction in time spent by field staff per parcel



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Thank You, more in the Paper!

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