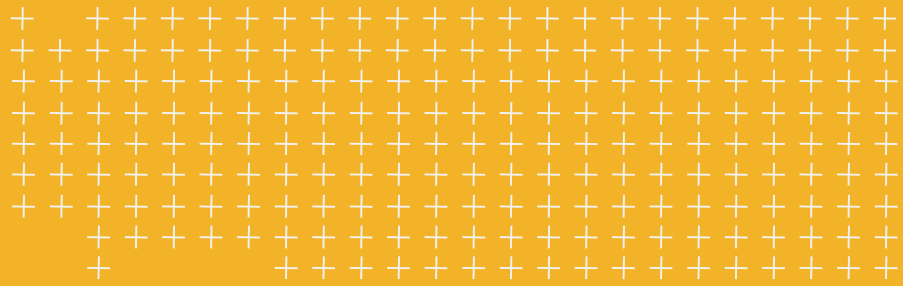


OPTRON



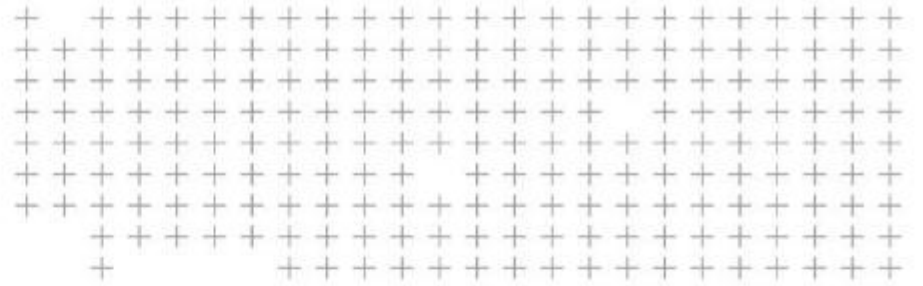
Jason Pretorius | Business Development Manager: Africa



7 FEBRUARY 2020

Integrated Approach to Spatial Data Capture for Land Administration





Land Tenure Security

Sustainable Development of Africa

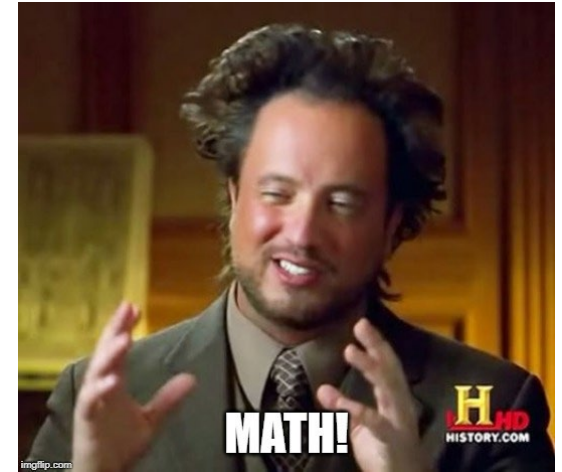
- **No 1.** goal of the UN's sustainable development goals for 2030 is focused on ending poverty.
- How do we measure this??



Measuring Secure Land Tenure

$$\text{Sub - indicator (a)} = \frac{\text{Number of adults with legally recognized documentation}}{\text{Total Adult Population}} \times 100$$

$$\text{Sub - indicator (b)} = \frac{\text{Number of adults who perceive their rights to land as secure}}{\text{Total Adult Population}} \times 100$$



<https://landportal.org/book/sdgs/142/sdgs-indicator-142>

What is Land Administration?

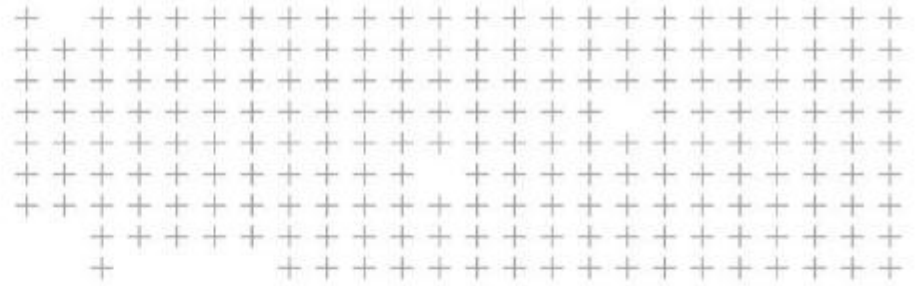
- Land administration is a general term for the processes of:
 - land rights' recognition,
 - land use planning,
 - land taxation, and
 - developing accurate land information
- It is central to the effective management of land and, therefore, critical to development in Africa



What are we dealing with?

- Africa has been subject to conflict, conquest, expropriation and exploitation thus resulting in the many discrepancies that exist today.
- As there is no single definition of 'land' and property rights, it is imperative that land planning activities, take the physical facts of an area into consideration
- Current spatial methods include “mental mapping”
- But how can we improve on these methods?





Integrated Spatial Data Collection

Tools

- Land Surveying
- Remote sensing
- UAV Mapping
- Cartography
- GIS
- GNSS
- Photogrammetry
- Laser Optics
- Geophysics
- Geography



CORS



- Used to create an accurate GNSS network for vast areas (Country wide)
- Improve overall quality of spatial data in country
- Brings high accuracy (cm level) to everyone
- Lowers overall cost of survey grade accuracies
- Currently installed in Namibia, Botswana, Zimbabwe, Mozambique, Kenya, Uganda, RSA

Trimble RTX



- High accuracy anywhere in the world
- Satellite delivered correction, also available via IP/cellular
- Absolute positioning (PPP)
- No need for a base station
- Available in meter to centimeter level accuracies

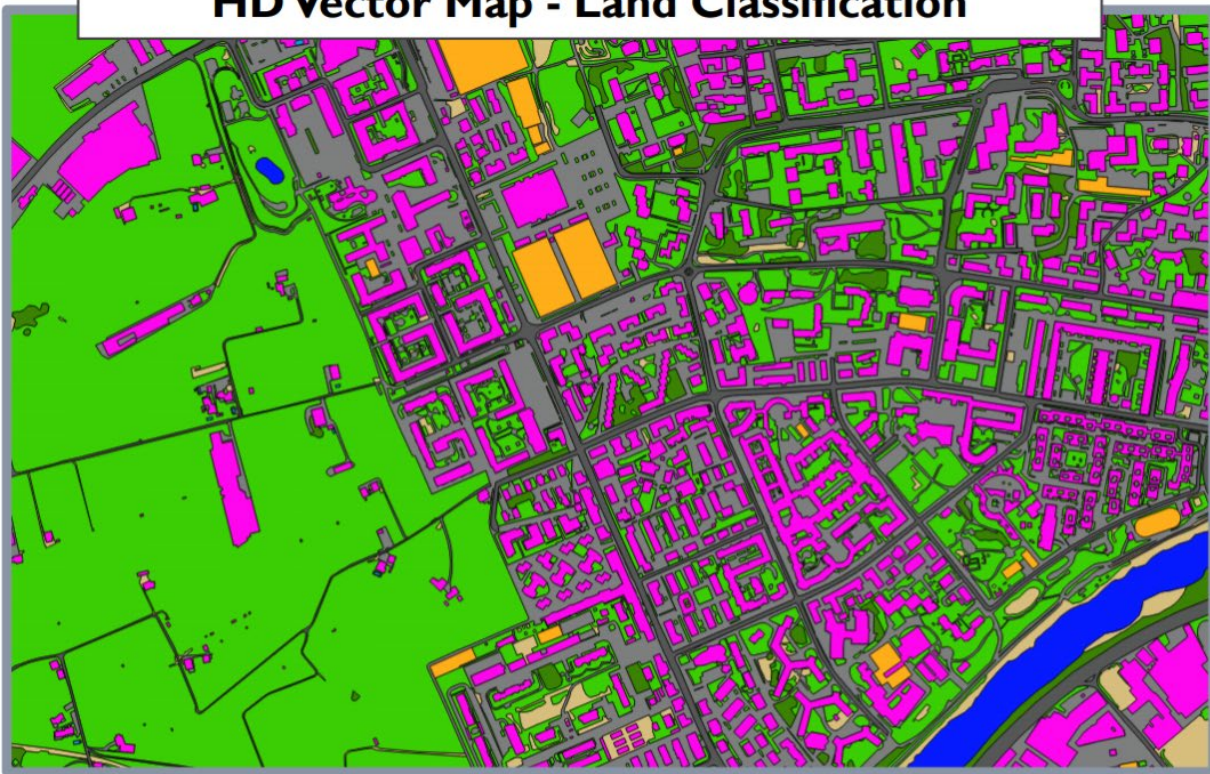
UAV

- Real time data
- High resolution
- Cheap Technology
- Repeatable
- Accessible and easy to use



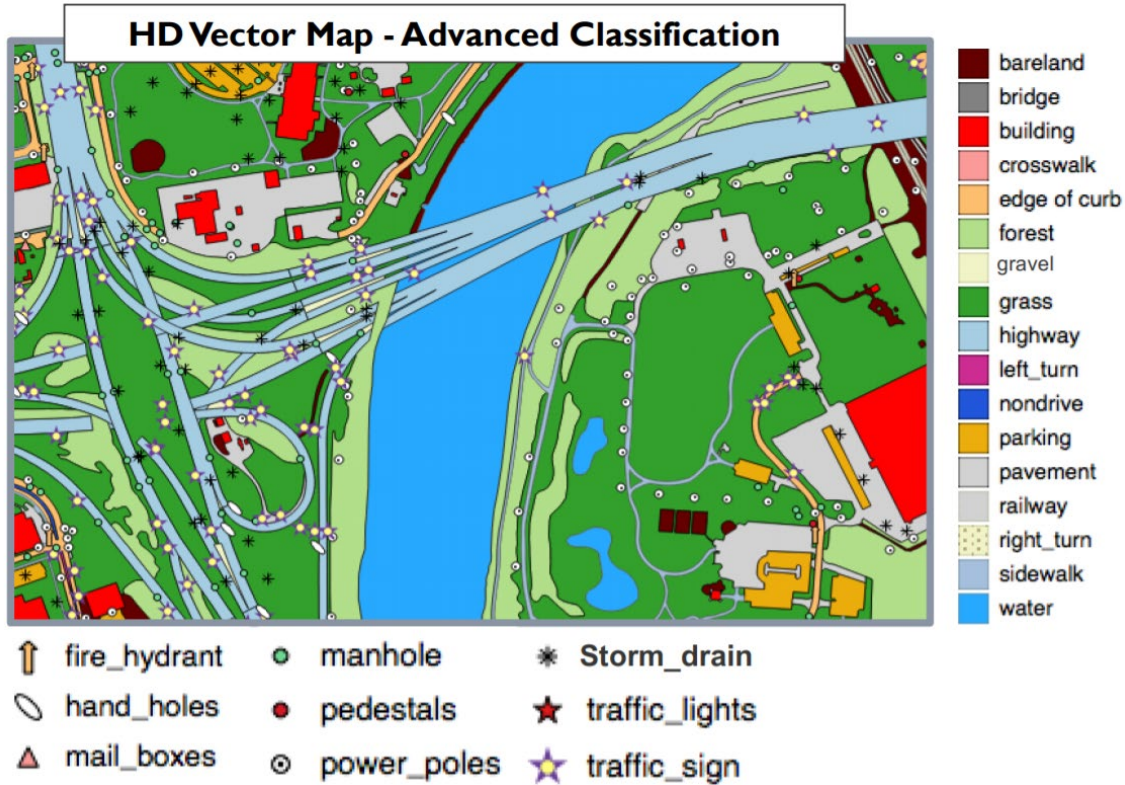
Remote Sensing

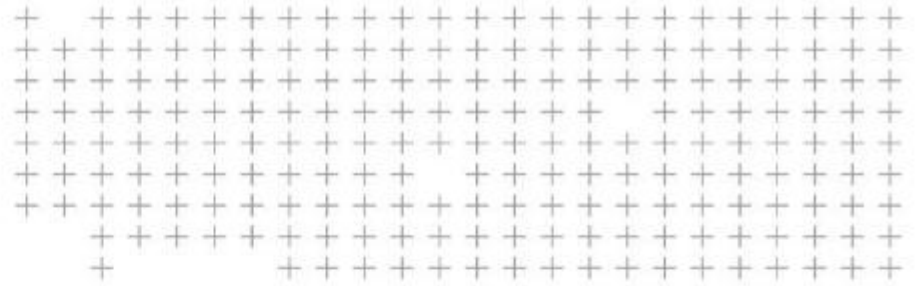
HD Vector Map - Land Classification



- Building
- Forest
- Grass
- Water Body
- Bare Land
- Sports Field
- Pavement
- Road

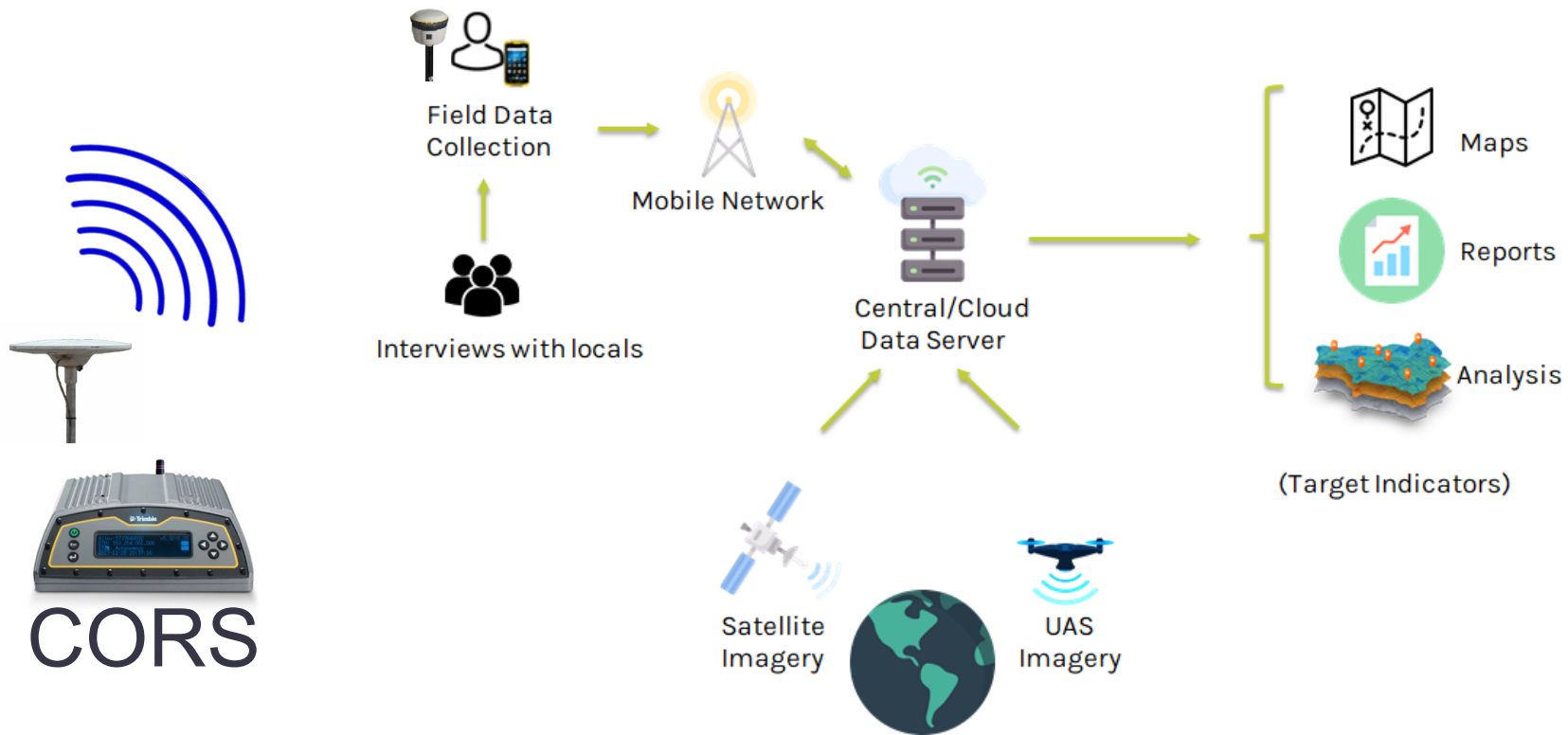
Remote Sensing





OPTRON's Approach

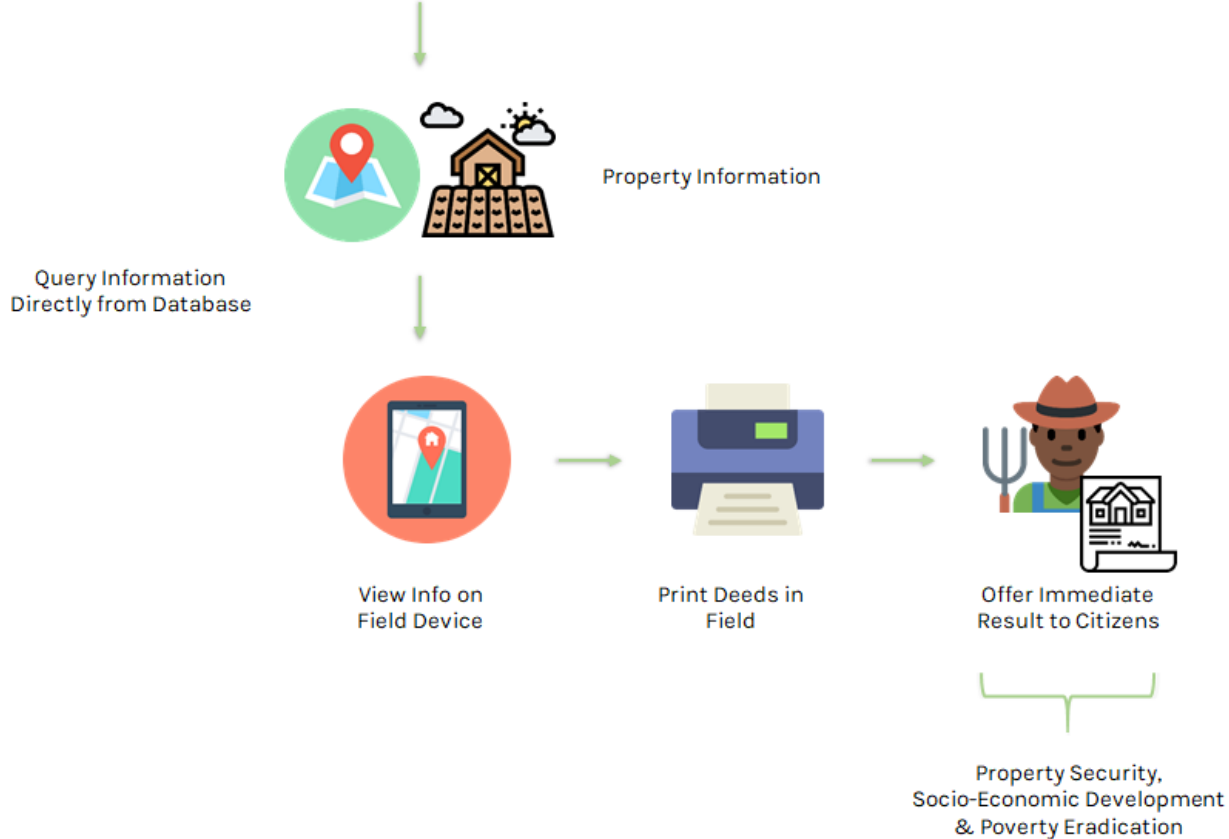
Combined Data Collection Approach



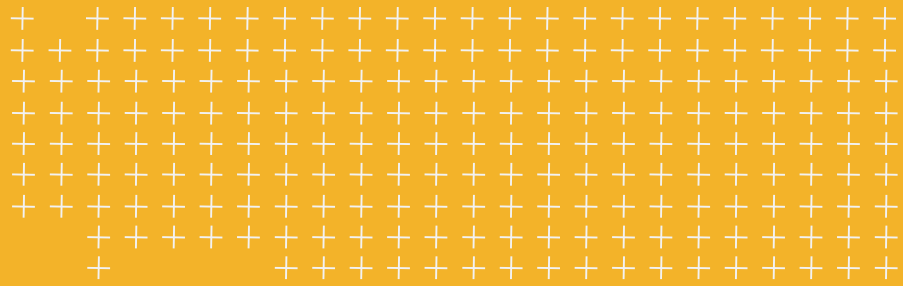
Data Dissemination



Data Dissemination



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Thank you