'MOVING TOWARDS A MORE DATA DRIVEN APPROACH IN THE DAILY WORK OF THE INSPECTORATE'

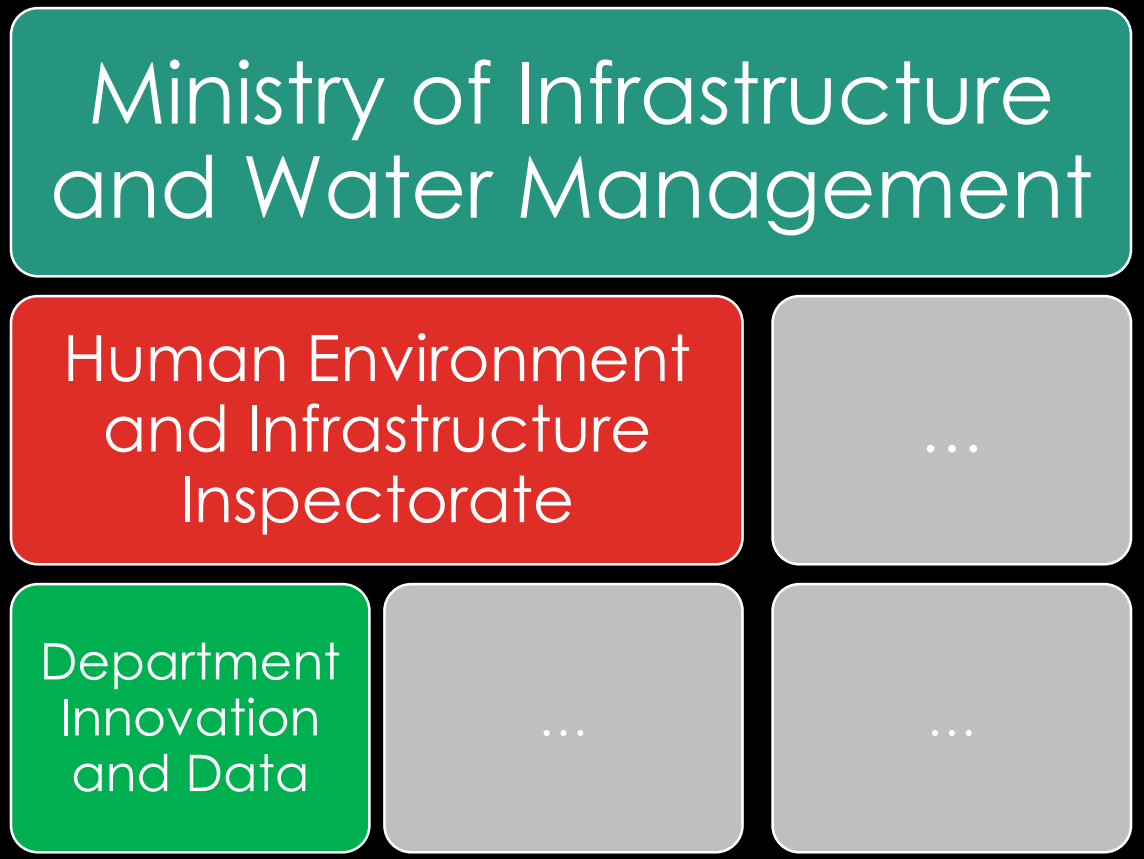
Using satellite data and/or RPA technology

Joël Davidse ILT ID-lab

INTRODUCTION INSPECTION AND INNOVATION

- Inspection
- Health people, environment, economy
- “moving towards..”
- Room for innovation
- Dedicated department
- Multiple disciplines

- Geographic Information Systems
- Remote Sensing



DATA DRIVEN

- History, tradition
- Knowledge, expertise inspectors in specific domain
- Limitations
- Developments, overwhelming amount of data
- Data science

REMOTE SENSING

Seeing (sensing) more from further away

Platform: anything

Satellite and RPA's

Sensor: anything

Radar, multispectral and gas sniffers

Powerful combination costs-efficiency

EXAMPLE 1: SBIR

Small Business Innovation Research Programme

- Netherlands Space Office, ILT, The National Police, National Forensic Institute
- Detection of possible violations/risks with storage, operations and applying of soil and construction materials, using satellite data

> 20000 a year (reported activities with soil and building materials like sand, bottomash etc.

Change detection

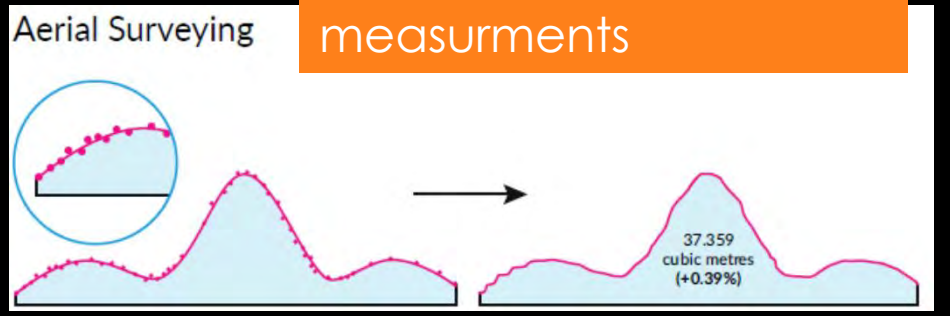
Who is doing what, where and when? And is the activity properly been reported?

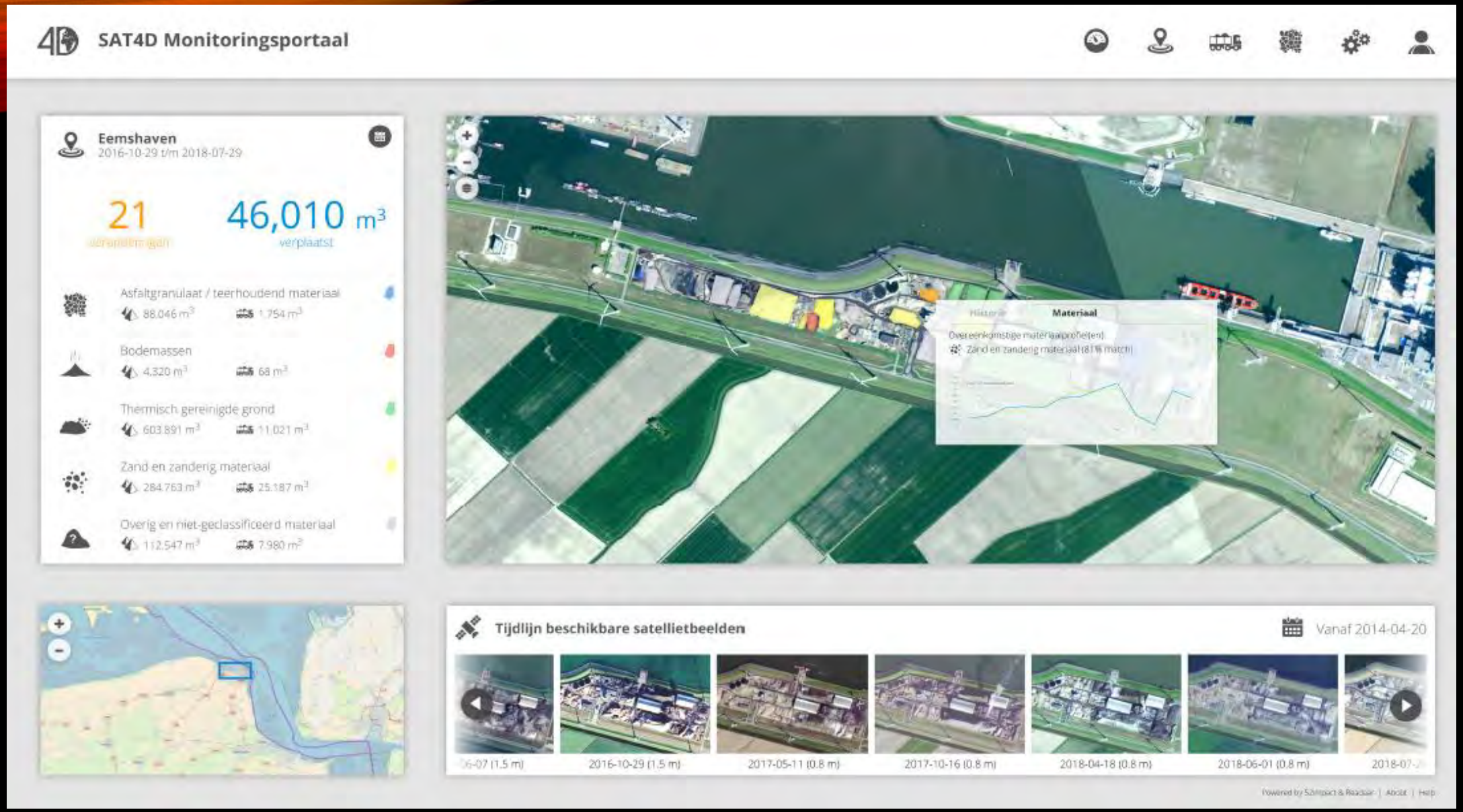
Satellite data analysis:

- Change in landscape
- Increase/decrease of volumes
- Indentification type of material

Which material? Quantification change in volume?

RPA volume measurments





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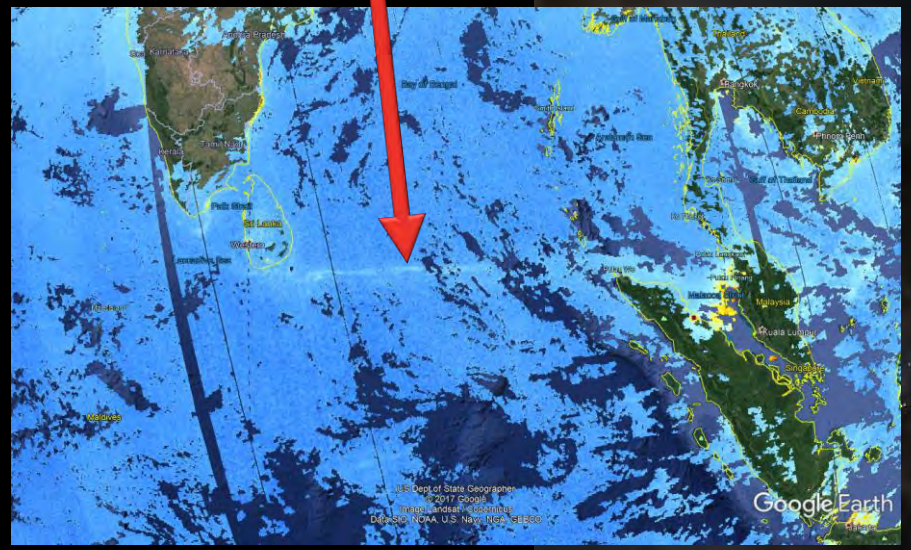
EXAMPLE 2: SULPHUR MONITORING

- Legislation sulphur content in fuel
- Related to SO2 content of emission
- Tropomi data (Sentinel 5P)
- EMSA data
- Combining GIS and RS
- Efficiency inspections

TROPOMI

KNMI/NSO/ESA



Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO
Image Landsat / Copernicus
Image U.S. Geological Survey

Google Earth

Imagery Date: 12/14/2015 lat 35.691361° lon 14.016640° eye alt 15368.55 km

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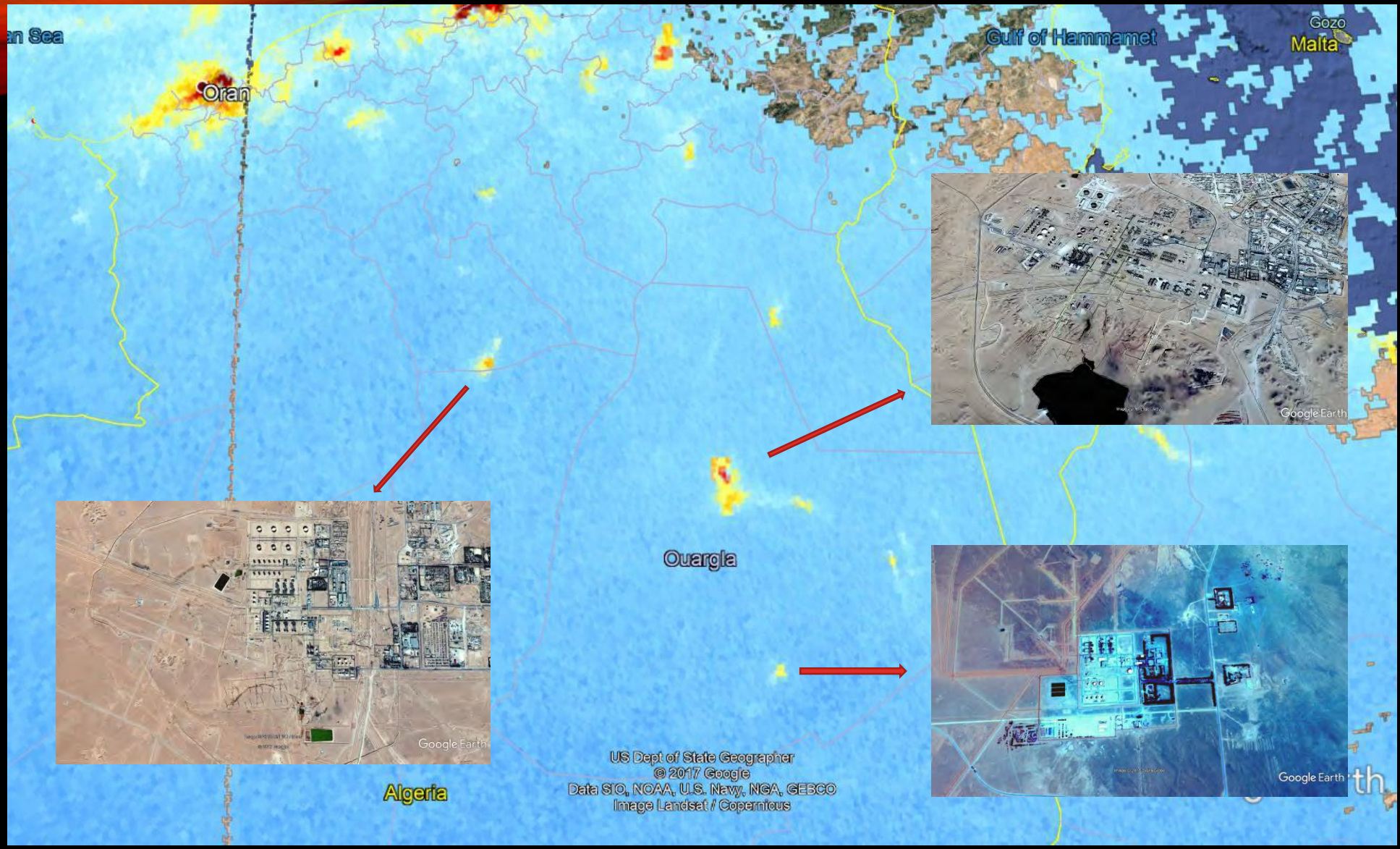
Oran
Gulf of Hammamet
Gozo
Malta
Ouargla
Algeria
US Dept of State Geographer
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Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
Google Earth
Google Earth
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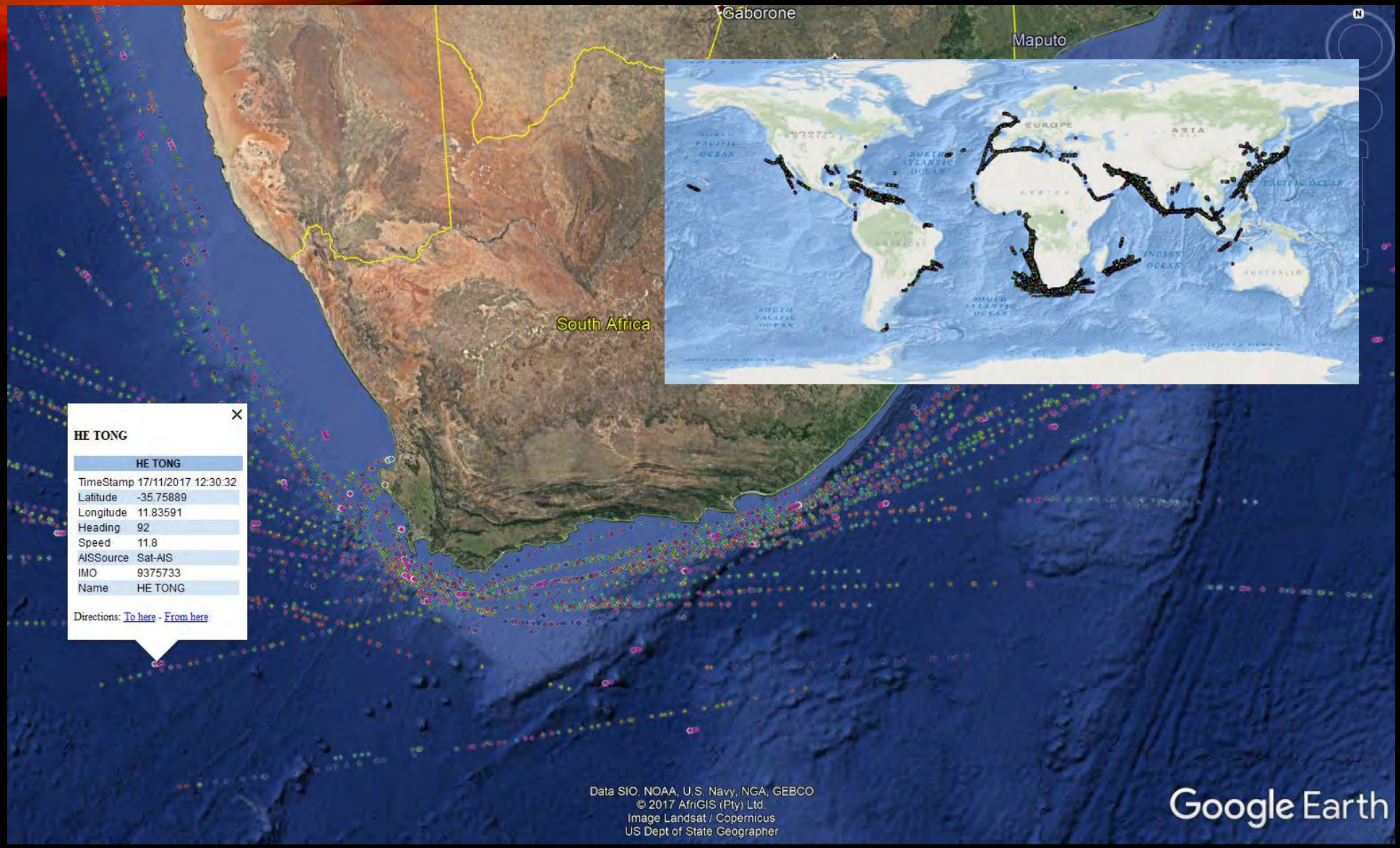
Gaborone
Maputo
South Africa
HE TONG
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Speed 11.8
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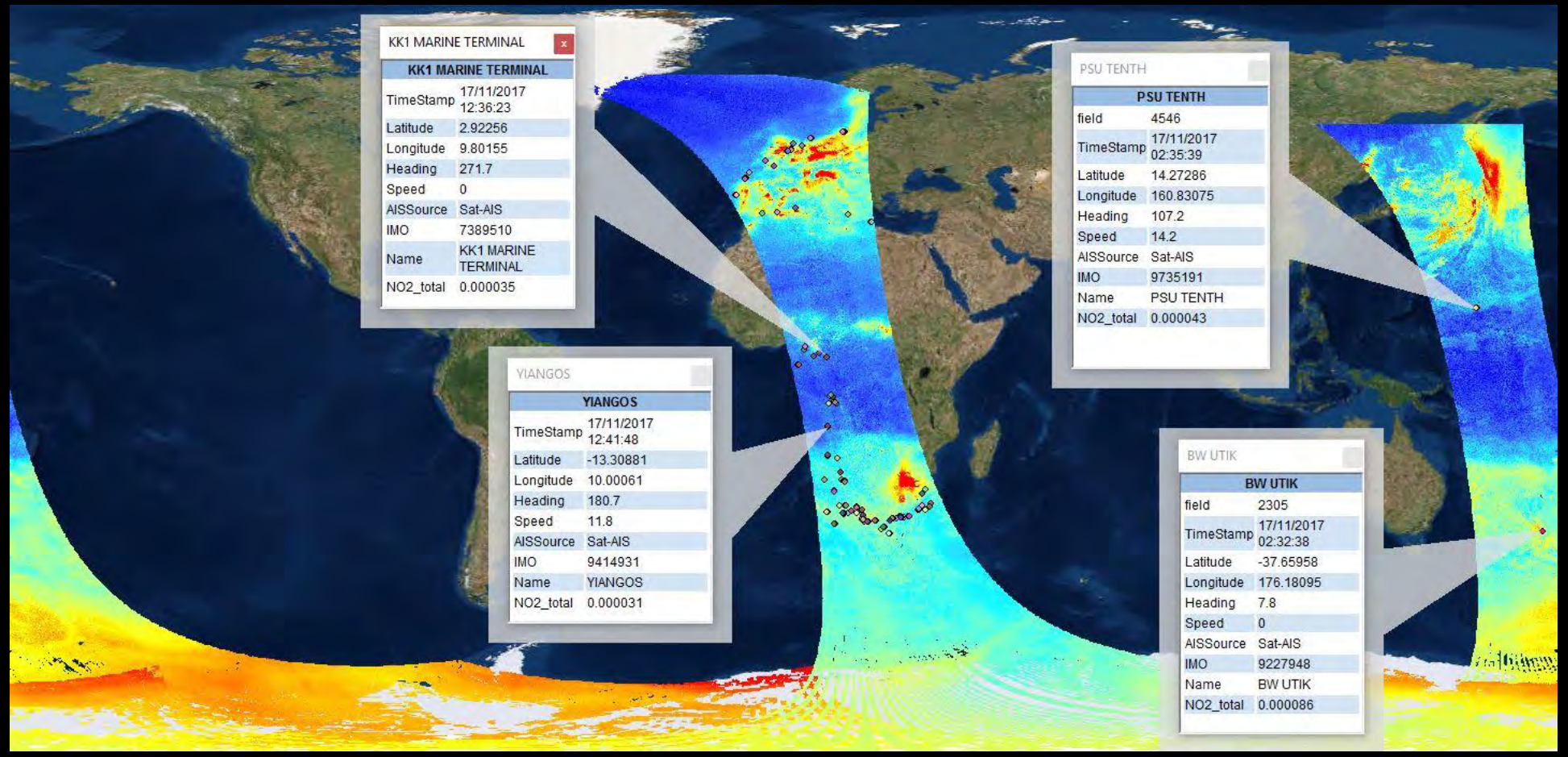
IMO 9375733
Name HE TONG
Directions: To here - From here
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2017 AfriGIS (Pty) Ltd.
Image Landsat / Copernicus
US Dept of State Geographer
Google Earth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KK1 MARINE TERMINAL
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PSU TENTH
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BW UTIK
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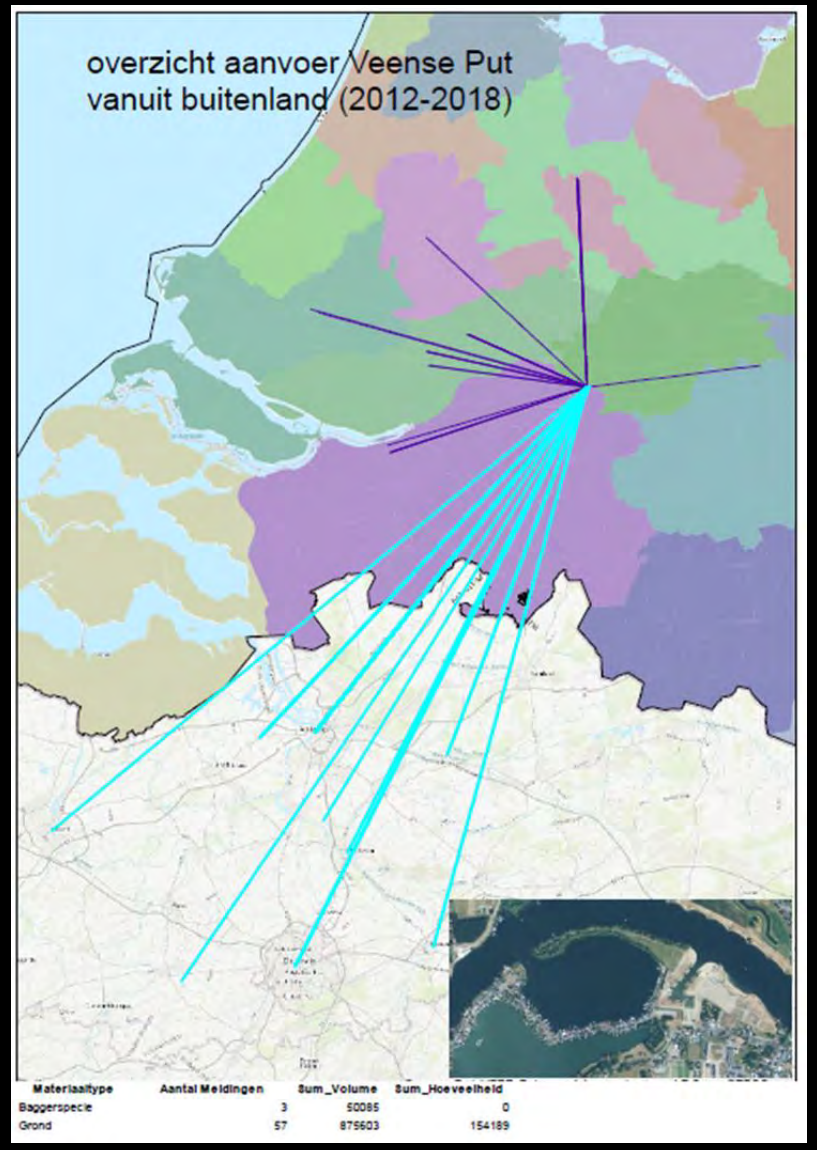
EXAMPLE 3: DUMPING INLAND WATERS

What are the effects of dumping ‘clean’ soil and dredging material in inland waters

Turbidity related to activity

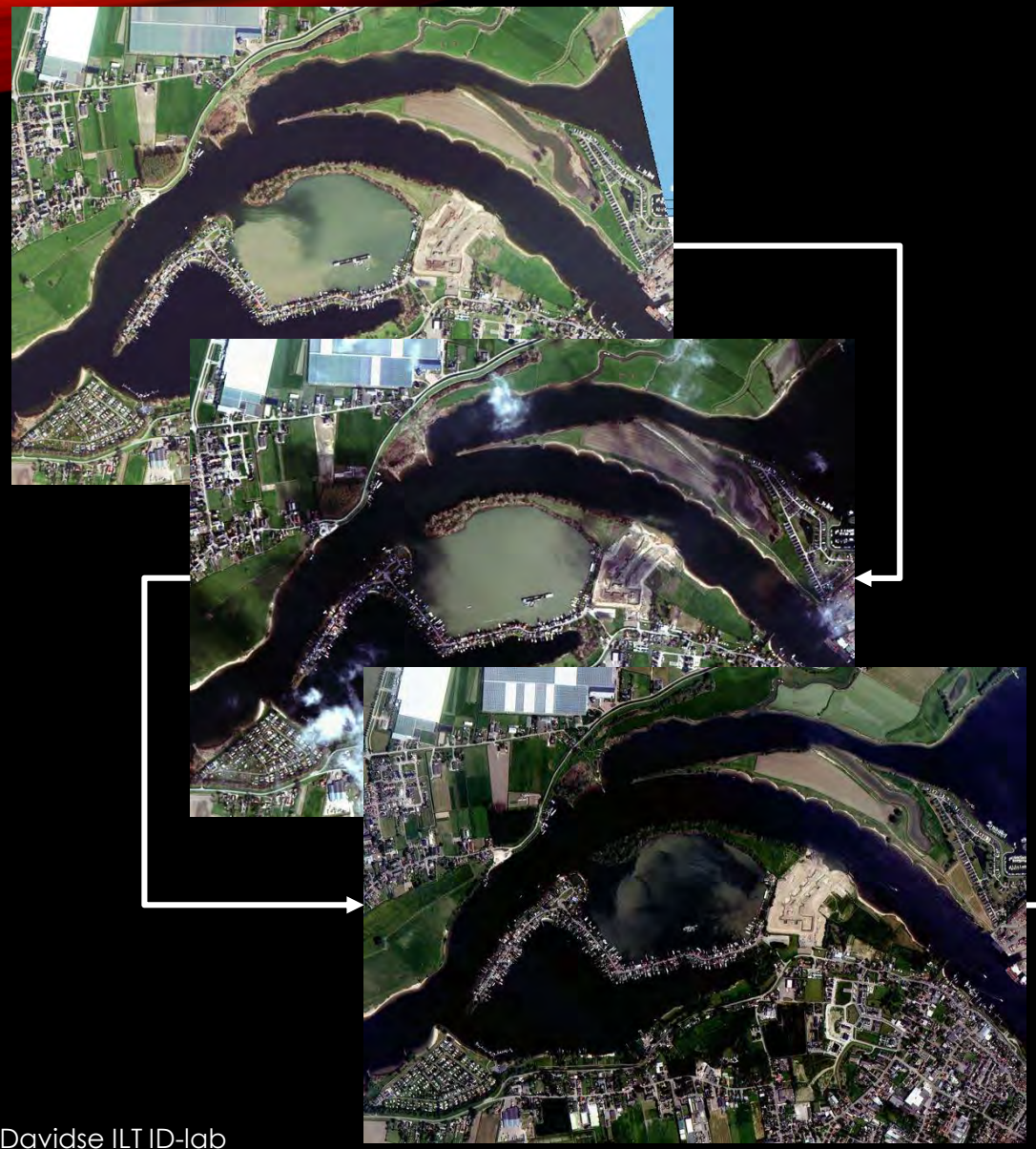
Looking back

upscaling



2016

2017



2018

THANK YOU FOR YOUR ATTENTION

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