



Space for National Development

Space and the 4IR

far**earth** 

pinkmatter
solutions

How are 4IR technologies being up taken and impacting the space industry (SME) in advancing the delivery of innovation and timely products and services?

Growing pains

- SME's in the space sector founded and operated by experienced persons previously from industry and
- New entrants
- Disruptive technology
- Require upskilling and relearning
- Funding

Opportunities

- Competitive due to lower overheads
- Increased degree of automation
- Introduction of AI, deep learning, etc.
- Cloud based solutions
- Extent position on the value chain
- Long term project engagement
- De-risking
- International engagements

Real-time Fire Warnings

Landsat fire front images using early detection and warnings from FarEarth Realtime chain



VIEW

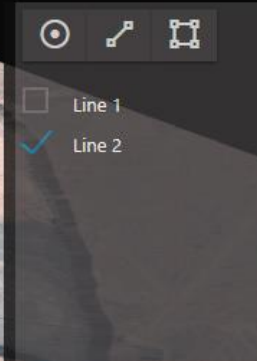
DIFF



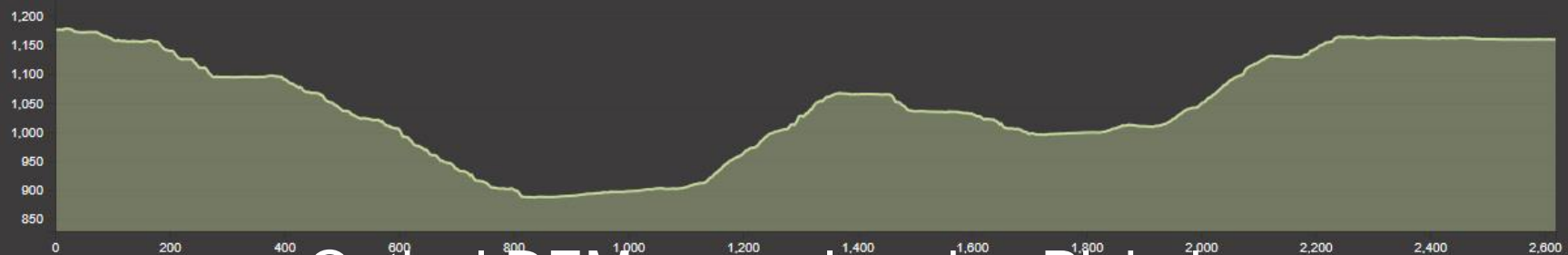
Oct 30, 2018

Oct 13, 2016

Sep 24, 2016



ELEVATION



Optical DEM example using Pleiades



VIEW

DIFF



2SO

4SO

5SO

SFT

OTL

2SP

4SP



Mar 16
2019

Mar 4
2019

Feb 20
2019

Feb 8
2019

Jan 27
2019

Jan 15
2019

Jan 3
2019

Dec 22
2018

Dec 10
2018

Nov 28
2018

Nov 16
2018

Nov 4
2018

Nov 4
2018



Feb 24
2016

Feb 12
2016

Jan 31
2016

Jan 19
2016

Jan 7
2016

Dec 26
2015

Dec 14
2015

Dec 2
2015

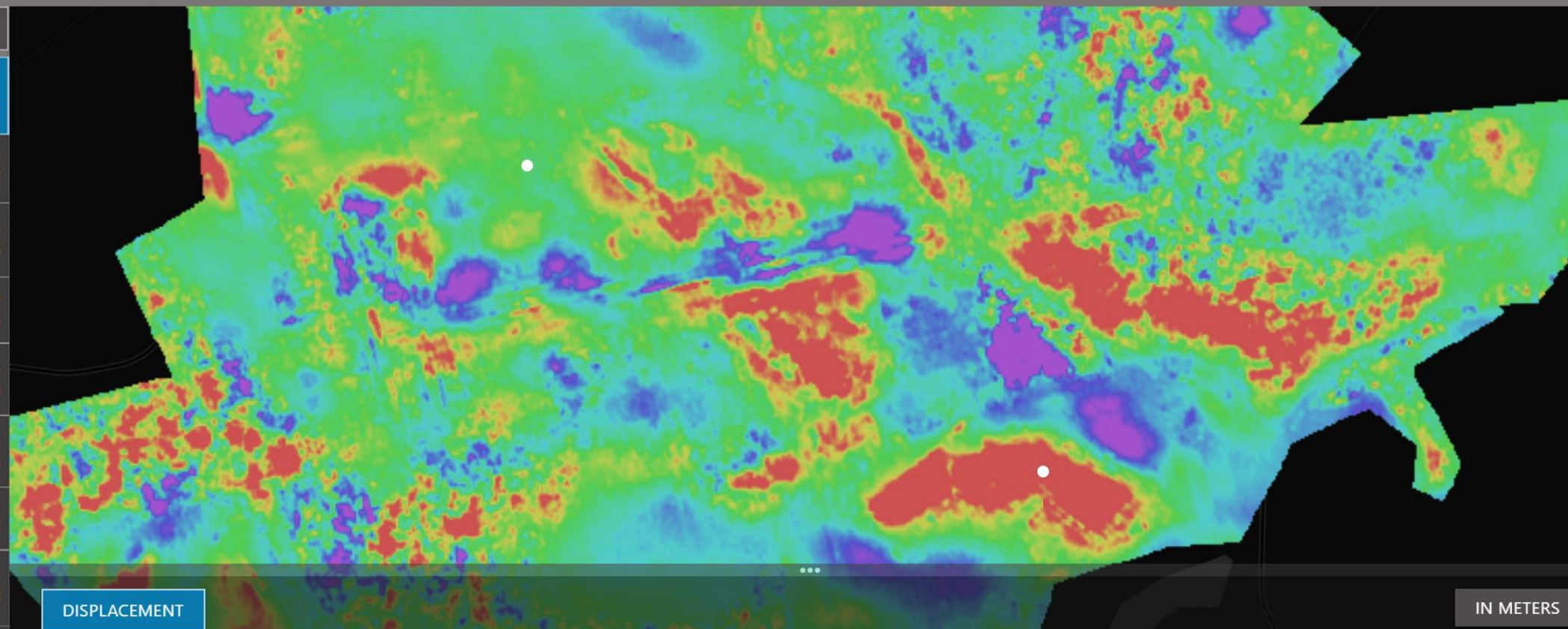
Nov 20
2015

Nov 8
2015

Oct 27
2015

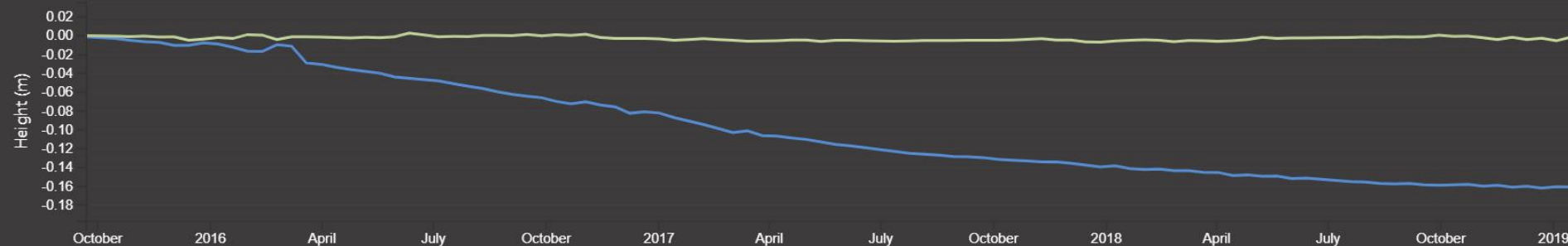
Oct 15
2015

Oct 15
2015



DISPLACEMENT

IN METERS



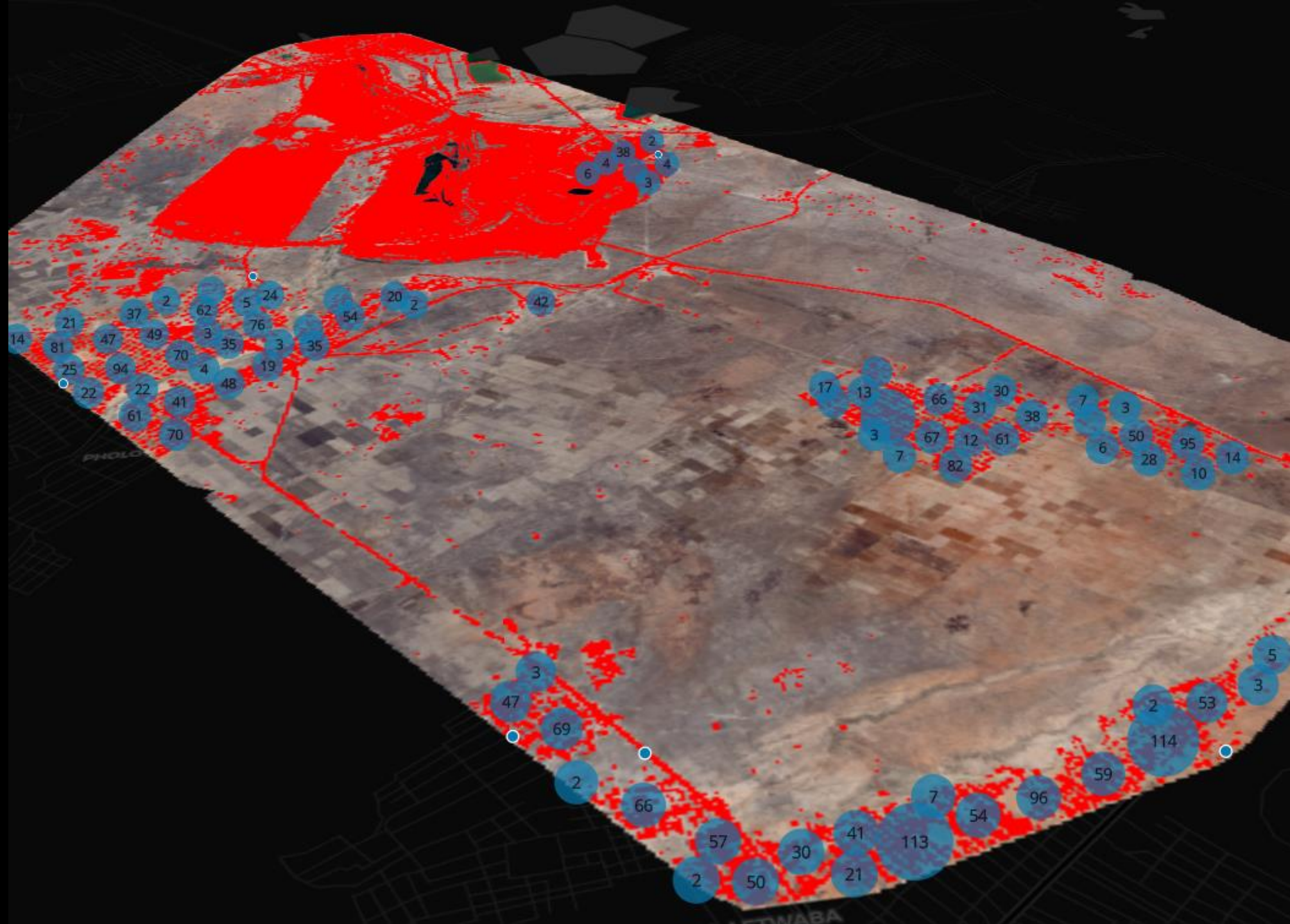
DInSAR example using Sentinel-1

Artificial Intelligence Applications

- Building/structure detection & classification
- Corridor monitoring & encroachment detection
- Vehicle detection & counting (e.g. cars, planes, ships)
- Semantic change detection (what kind of change)









Dwelling
detection



Dwelling count



Dwelling count change
over time

Up Take Benefits

- Every question is a chance for innovation
- New niches and markets evolving
- Better handle on timely delivery of product and service
- Increased collaboration



**“If you want to go fast, go alone.
If you want to go far, go together”
- African Proverb**

