

Big Data Analytics on combining radar and optical satellite data

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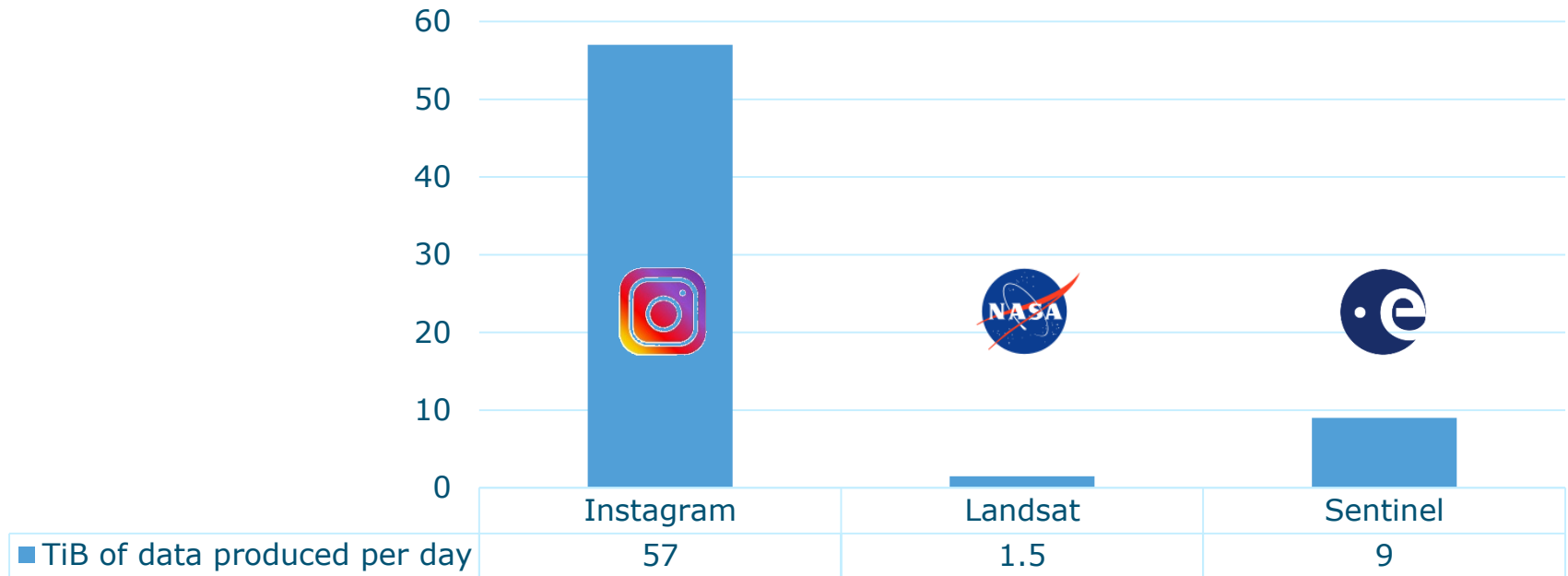
Big Earth Observation Data $\neq$ FAIR

- Not Accessible
- Not Interoperable

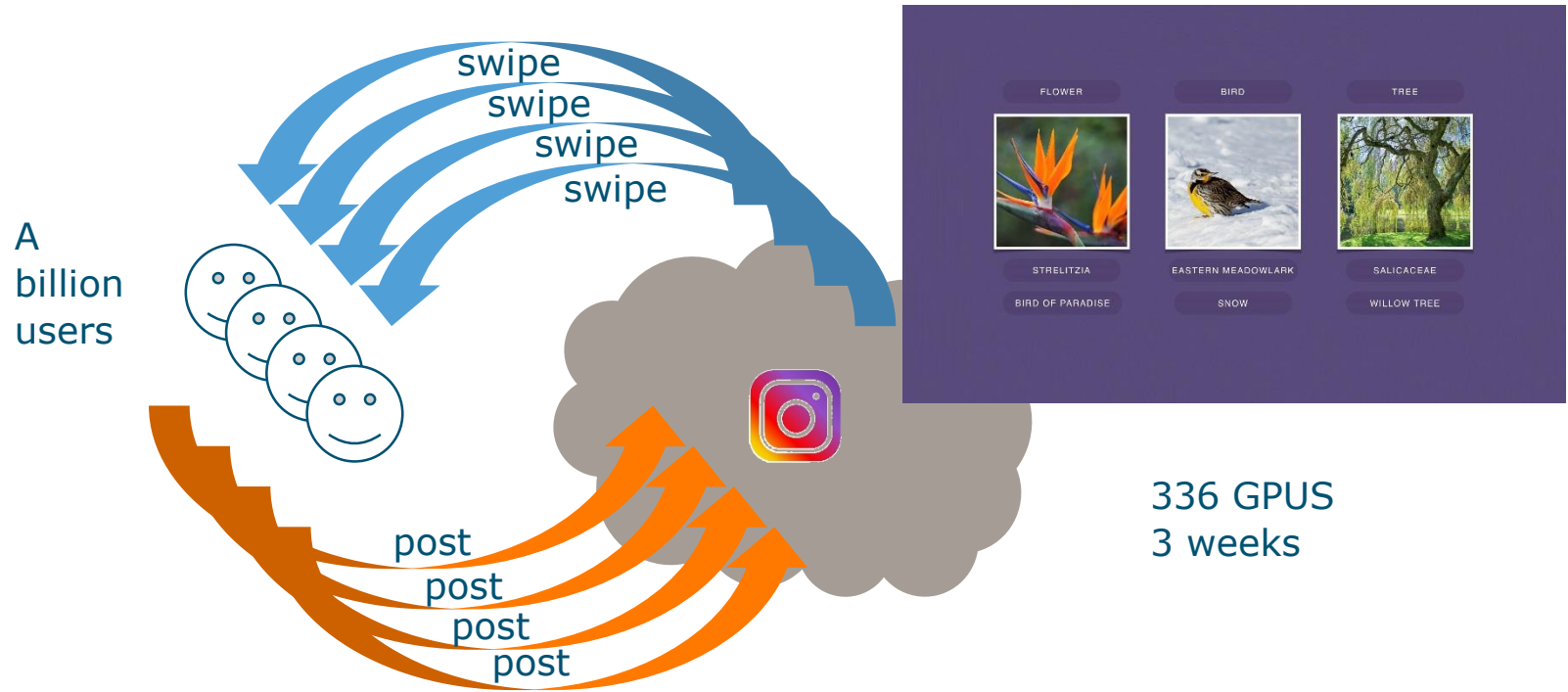
Remote sensing data is BIG

- 9 TiB/day published by ESA only for Sentinel 1 and 2
 - Since 2014
 - Cover the entire earth every ~ 5 days
 - 10 by 10 meters resolution
- 1.5 TiB/day published by USGS for Landsat 7 and 8
 - Since 1970s
 - Cover the entire earth every 16 days
 - 30 by 30 meters resolution

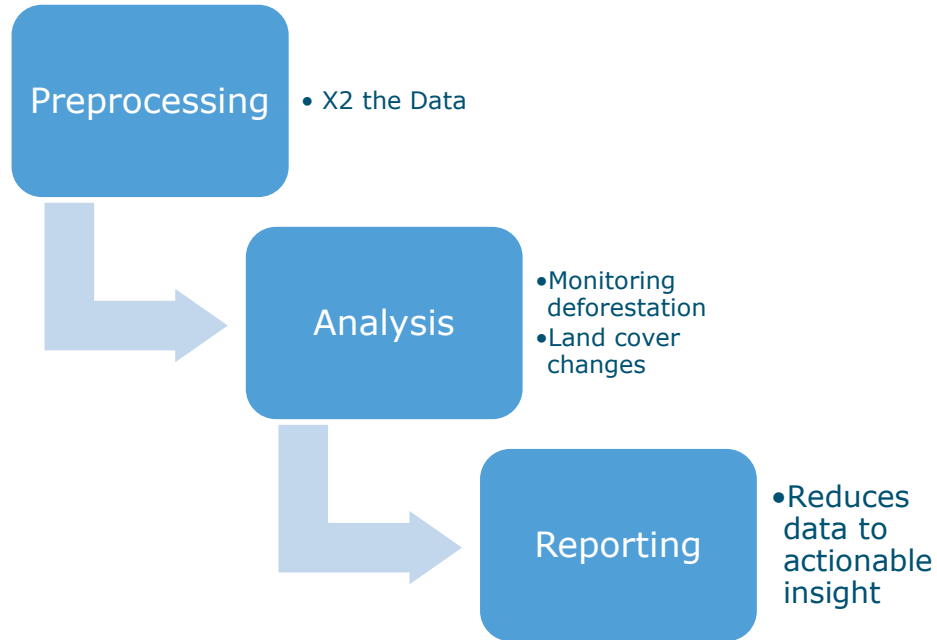
Who is the largest image producer



Instagram



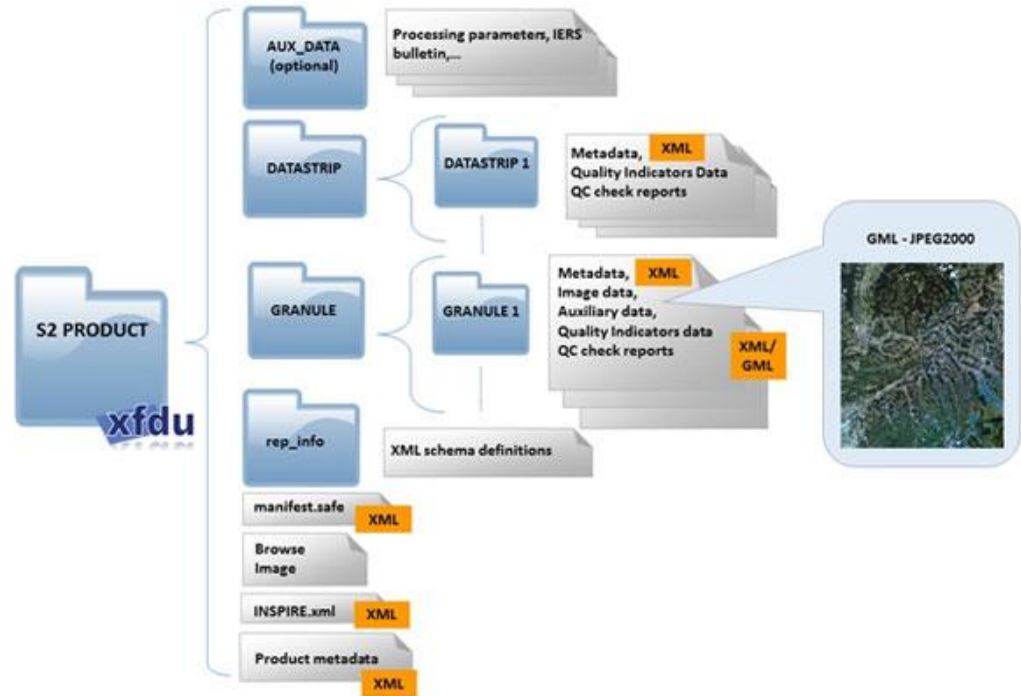
Satellite imagery



5 PiB
Sentinel
data

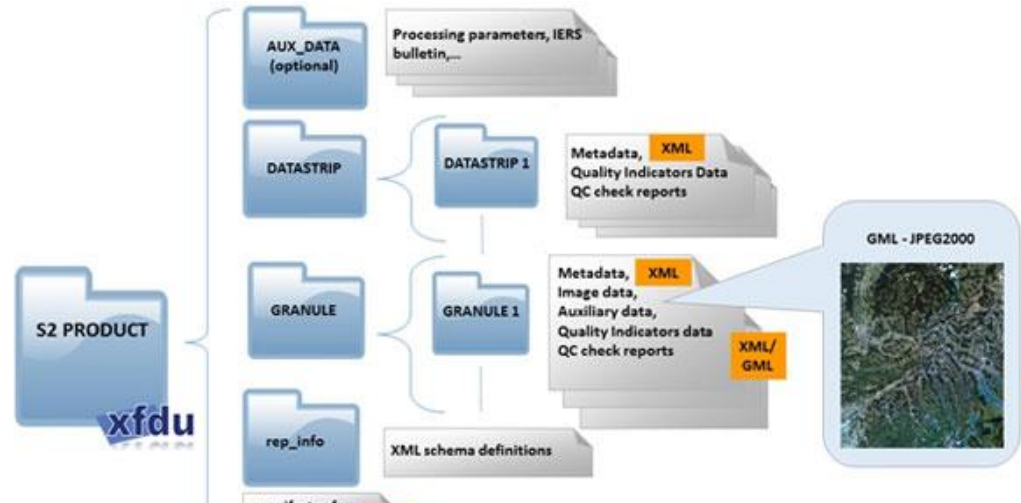
Sentinel Data – Theoretically FAIR

- 5 high speed access points
- Uses the SAFE format
- Rich metadata



Sentinel Data – Theoretically FAIR

- 5 high speed access points
- Uses the SAFE format
- Rich metadata
- Georeferenced

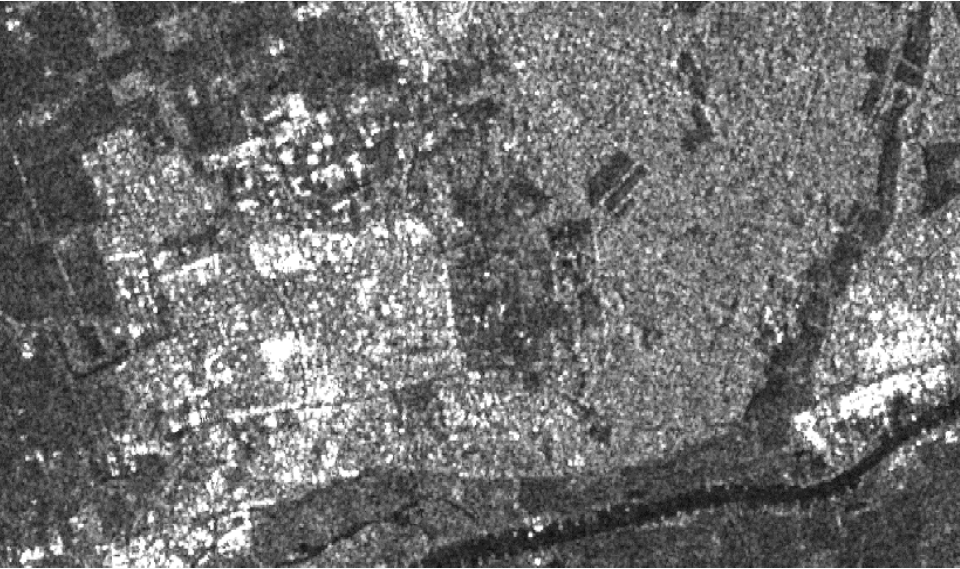


How FÁIR is Sentinel data in practice

- As Accessible as fresh water in the ocean
- The supply is almost unlimited
- Processing limits Accessibility

5 PiB
Sentinel
Archive

How FAÍR is Sentinel data in practice

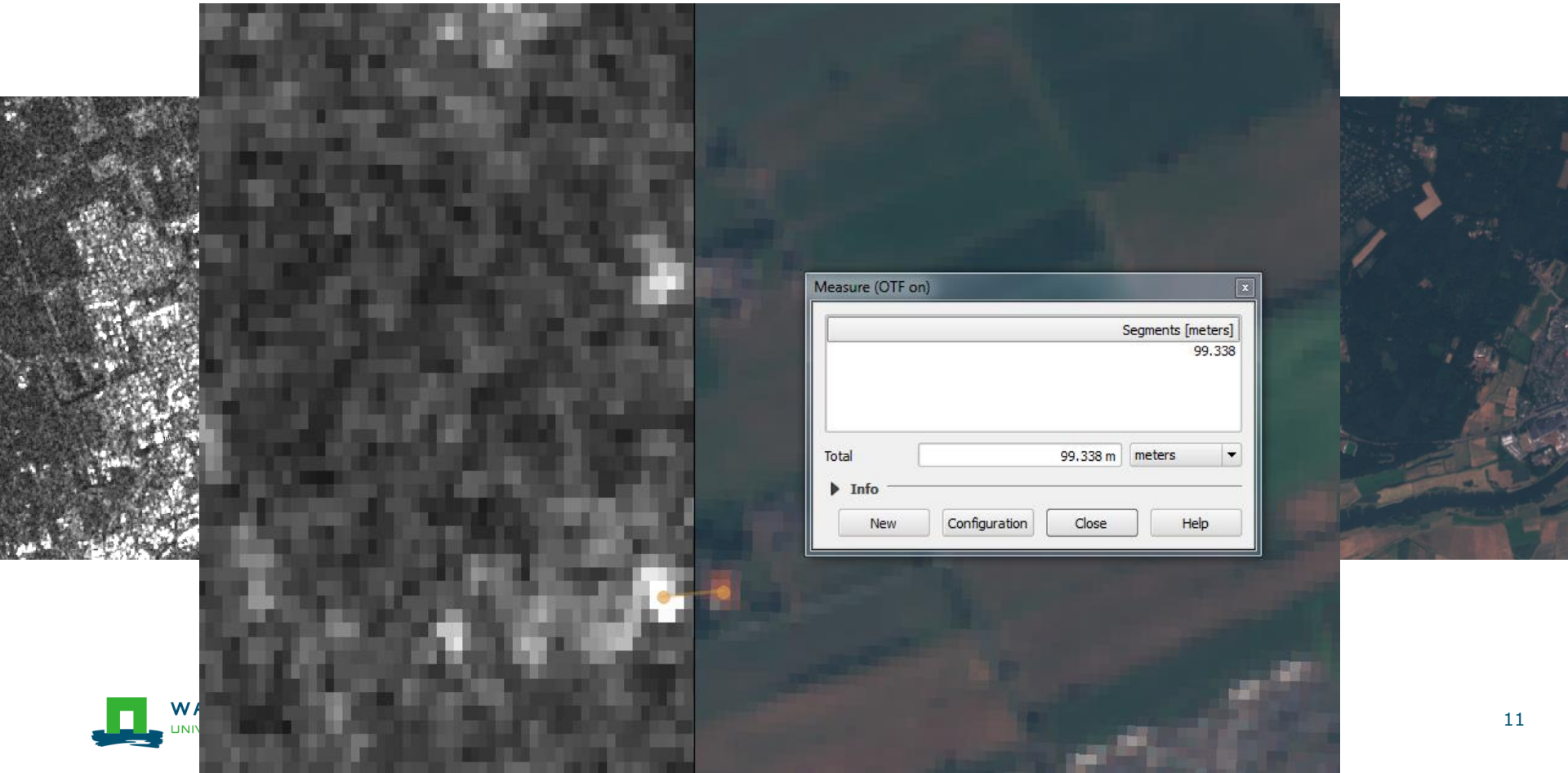


Sentinel 1 - radar

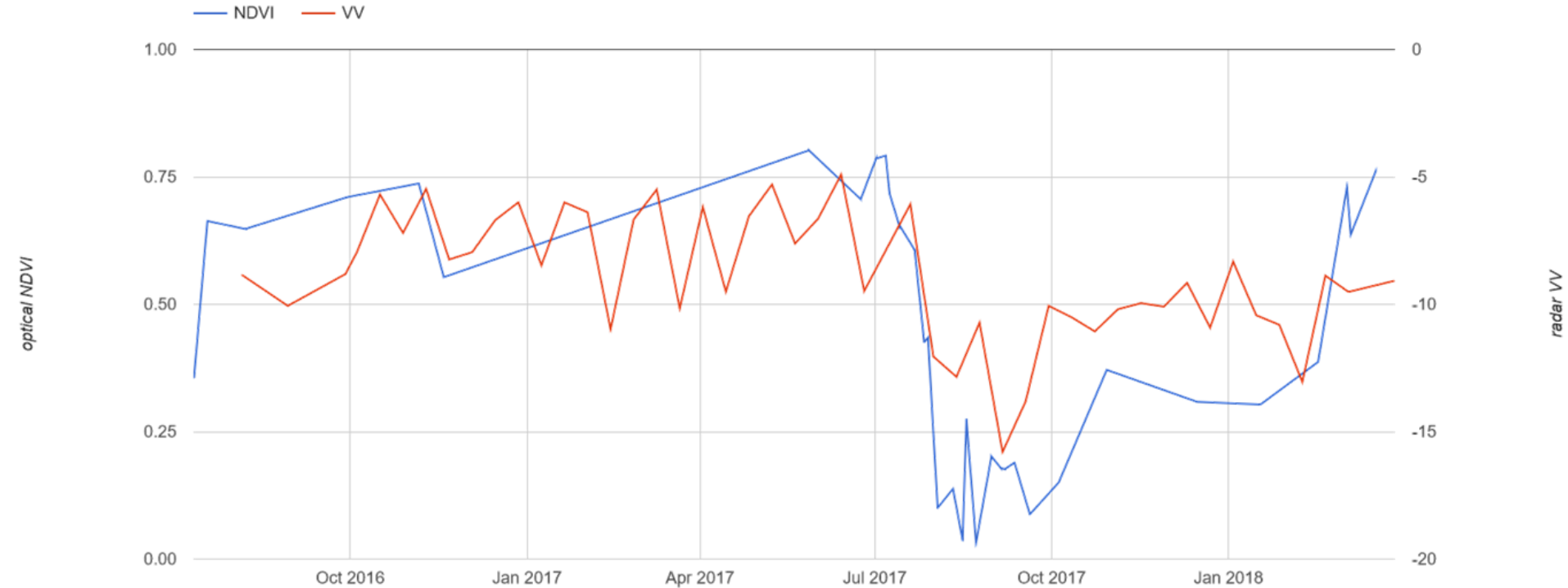


Sentinel 2 - optical

How FAÍR is Sentinel data in practice



Radar and optical interoperability



Conclusions

FAIR EO $\neq$ rich metadata

Big Data is FAIR only when
processing allows it

New methodologies must start
considering the volume of data

