

## Fiducial Reference Measurements









- > Importance of metrology:
  - Niro, F.; Goryl, P.; Dransfeld, S.; Boccia, V.; Gascon, F.; Adams, J.; Themann, B.; Scifoni, S.; Doxani, G. European Space Agency (ESA) Calibration/Validation
     Strategy for Optical Land-Imaging Satellites and Pathway towards
     Interoperability. Remote Sens. 2021, 13, 3003.
     <a href="https://doi.org/10.3390/rs13153003">https://doi.org/10.3390/rs13153003</a>
  - Traceability and uncertainty
  - Need for a standard format for exchanging these FRM data

# Importance of common terminology









- ➤ The definition of "surface reflectances" slightly differs among the ESA operational products. For S2, the L2A is an approximate of the HDRF (Hemispherical Directional Reflectance Factor)
- ➤ Blue sky vs Black sky surface reflectance
- → for S3, the Surface Directional Reflectance (SDR) corresponds to the BRF (Bi-directional Reflectance Factor)
- > Confidence interval and k coverage factor

### **Drone measurements**









#### > FRM4VEG

- Very good progress
- > Still some inconsistency for the SWIR bands
  Barrax campaign 2022 during heat wave
- > Conformity testing
- > Clear define metrics applied
- > Provide uncertainties
- > FAIR data access and format

## Water applications









- > Pixel Quality Control for match-ups
  - > Need for shadow flag over water ( cloud & topographic )
  - > Indicator of glint condition ?
- > Validation of adjacency correction needs transects information
  - > Drone
- > Wish to provide uncertainties for Sen2Water products