

# Sentinel 1, 2 ir 3 palydovinių vaizdų automatinio apdorojimo algoritmų kūrimas ir technologija

CartoCon2019

Evelina Miknevičiute, COWI GIS & IT

1 | 4 DECEMBER, 2019

**COWI**

# MOIST – Managing and Optimising Irrigation by Satellite Tools



# Partneriai

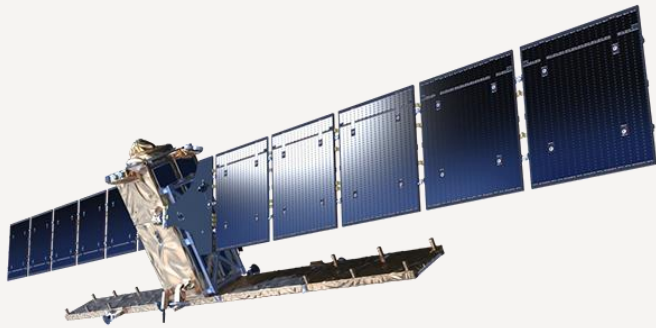


Technical University  
of Denmark

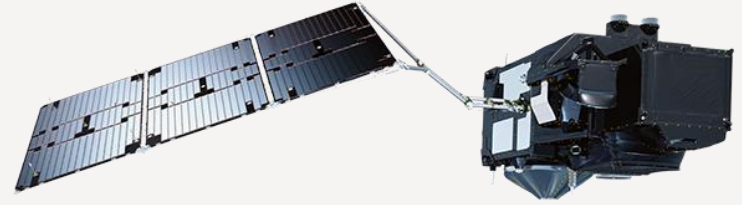


- > Danija
  - > Danijos Techninis Universitetas
  - > Sandholt
  - > COWI
  - > SEGES
  - > Aarhus Universitetas
  - > AgroSens
- > Italija
  - > CNR-ISSIA
- > Ispanija
  - > IRTA
- > Ekspertai iš įvairių disciplinų.

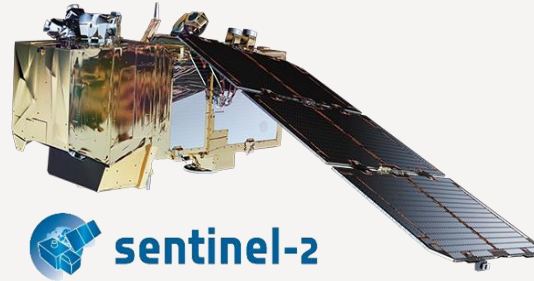




 sentinel-1

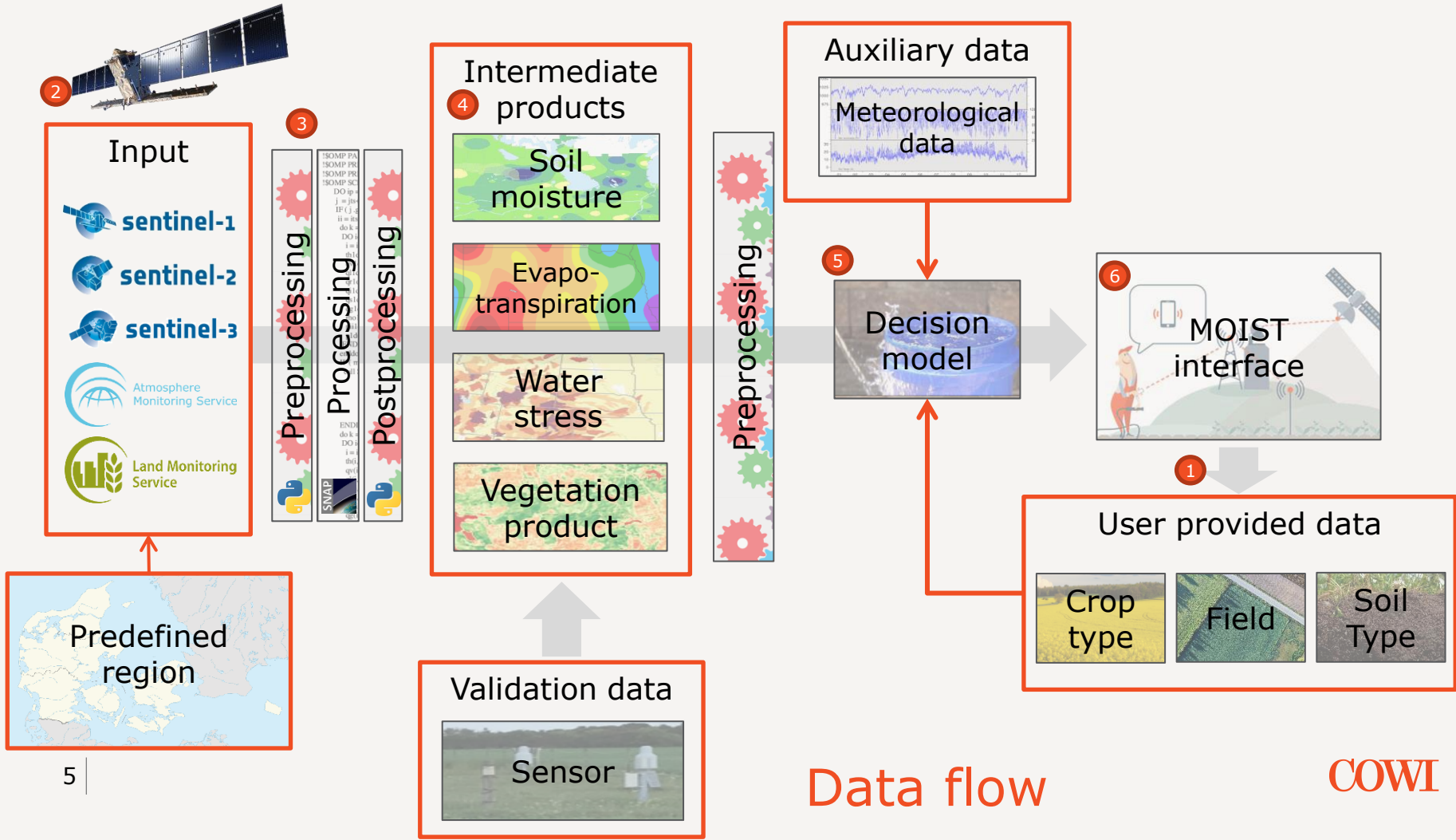


 sentinel-3



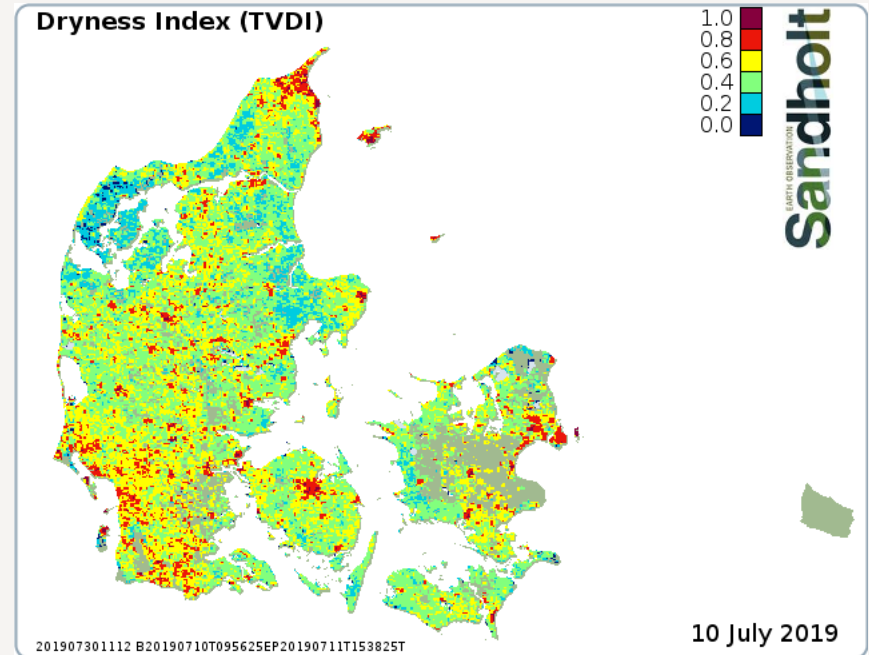
 sentinel-2

Palydovai	Rezoliucija, m	Dažnumas, dienos
Sentinel-1 SAR	20	6
Sentinel-2 MSI	20	5
Sentinel-3 SLTSR	1000	1



# Sausumo indeksas - TVDI

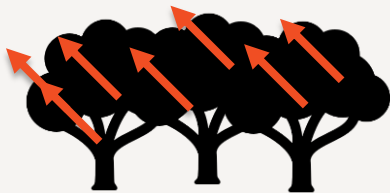
- > Paviršiaus temperatūra  $T_s$
- > Normalizuotas augmenijos skirtumo indeksas (NDVI)
- > Augalijos ir dirvos drėgnumo informacija
- > 1km rezoliucija



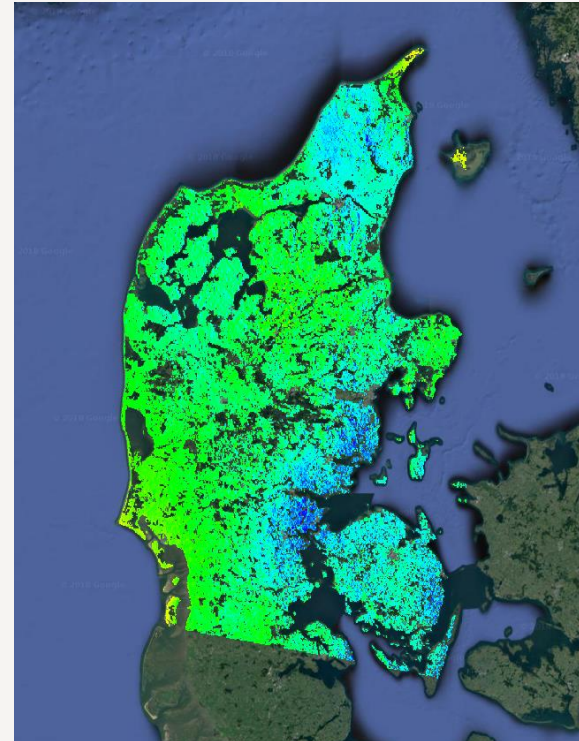
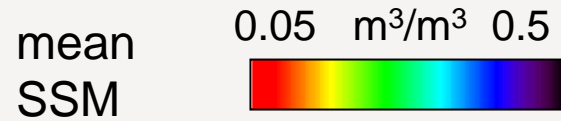
# Dirvos drėgmės nustatymas

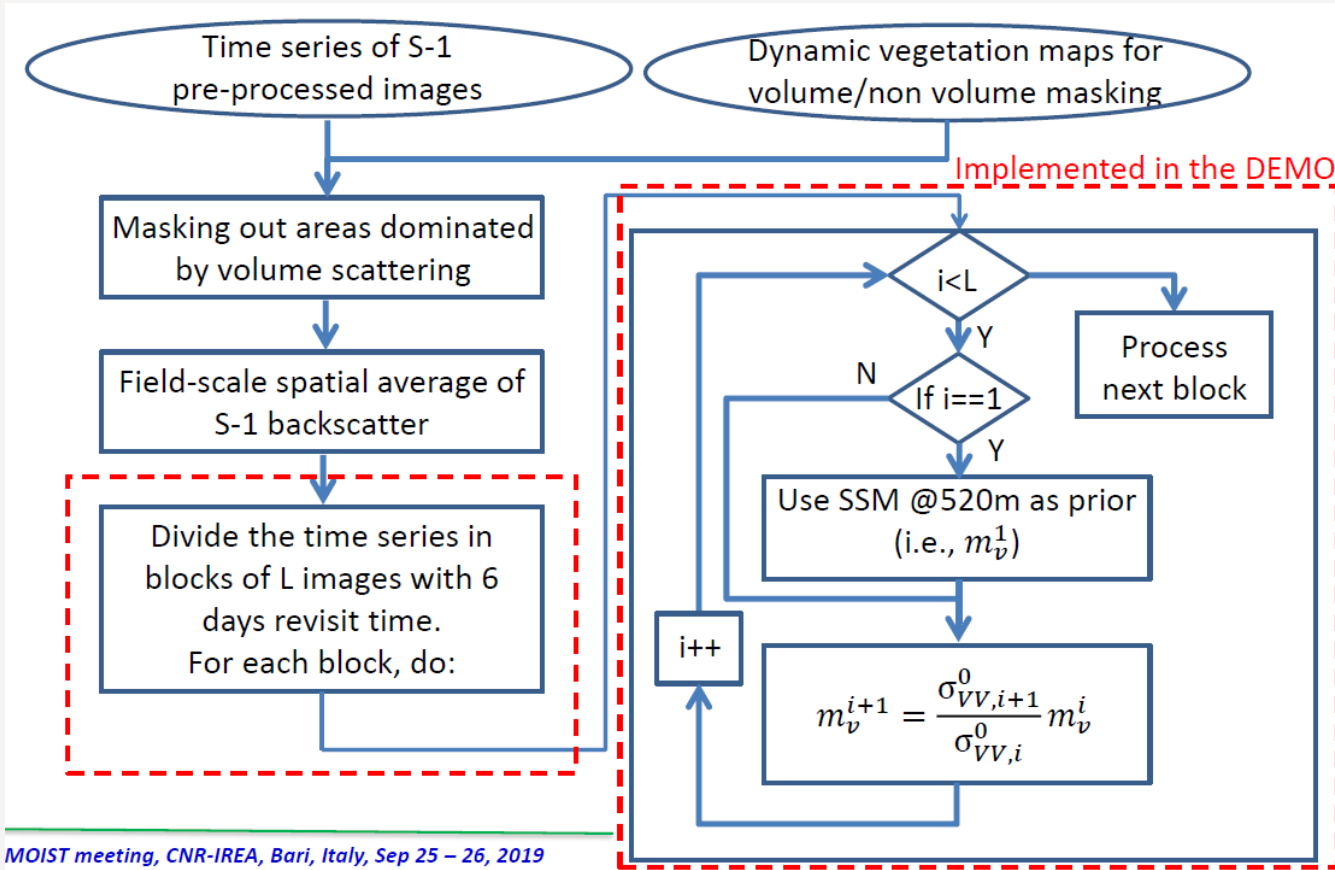
- > SMOSAR (Soil MOisture retrieval from multi-temporal SAR data)
- > Sentinel-1 C-band SAR.
- > Lauko lygmens galutinis produktas.

C-band



L-band

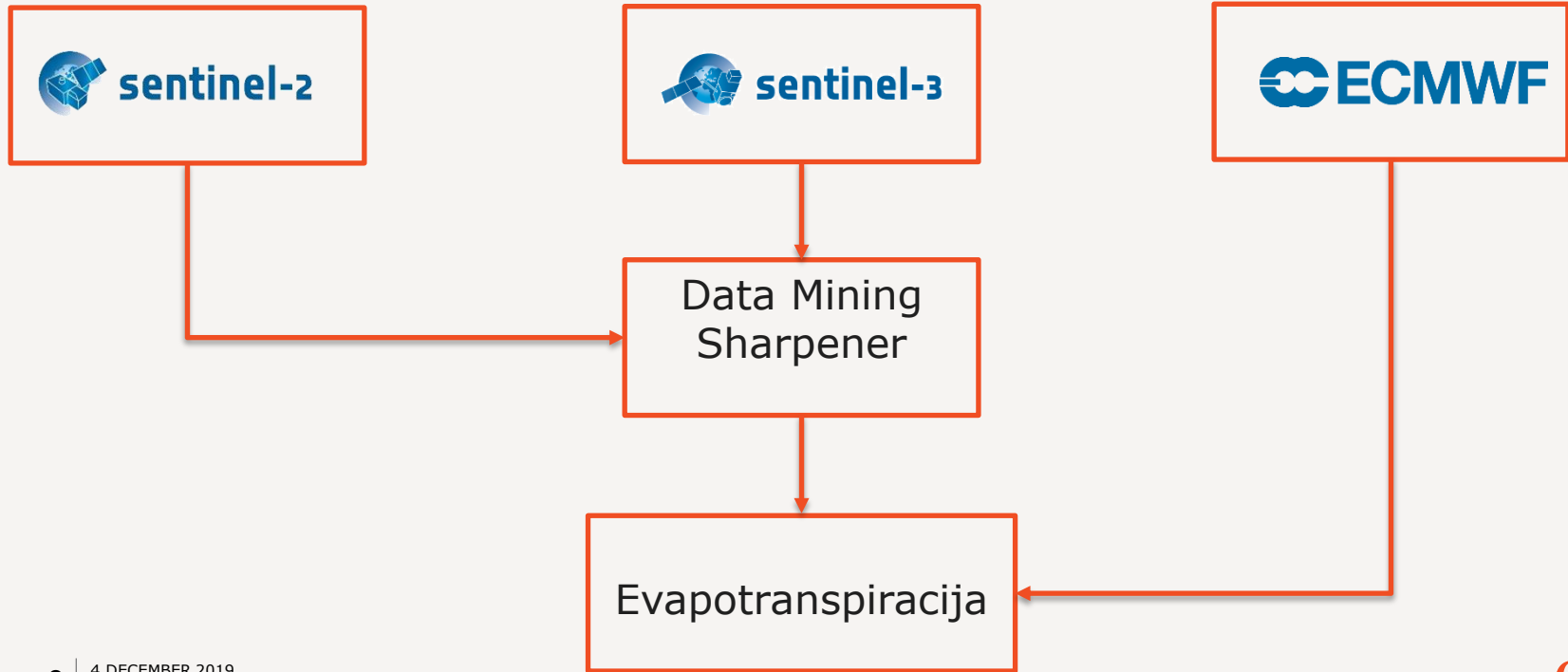




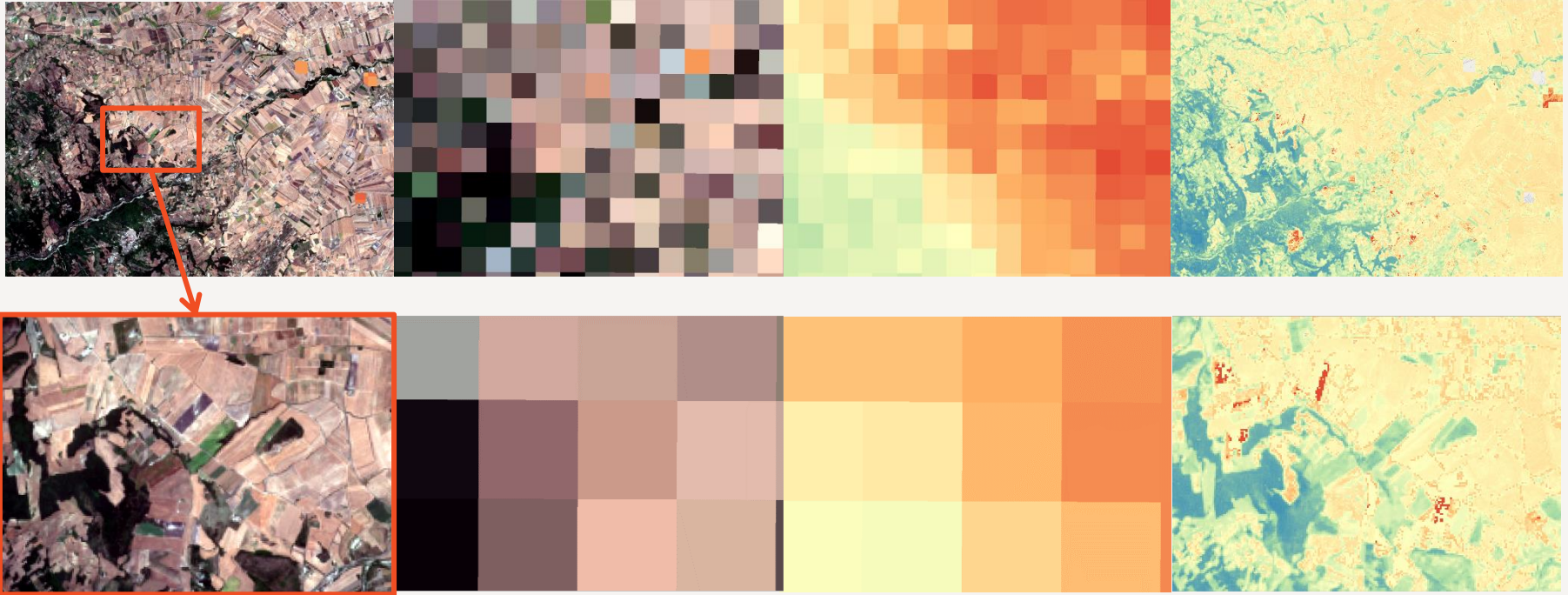
MOIST meeting, CNR-IREA, Bari, Italy, Sep 25 – 26, 2019



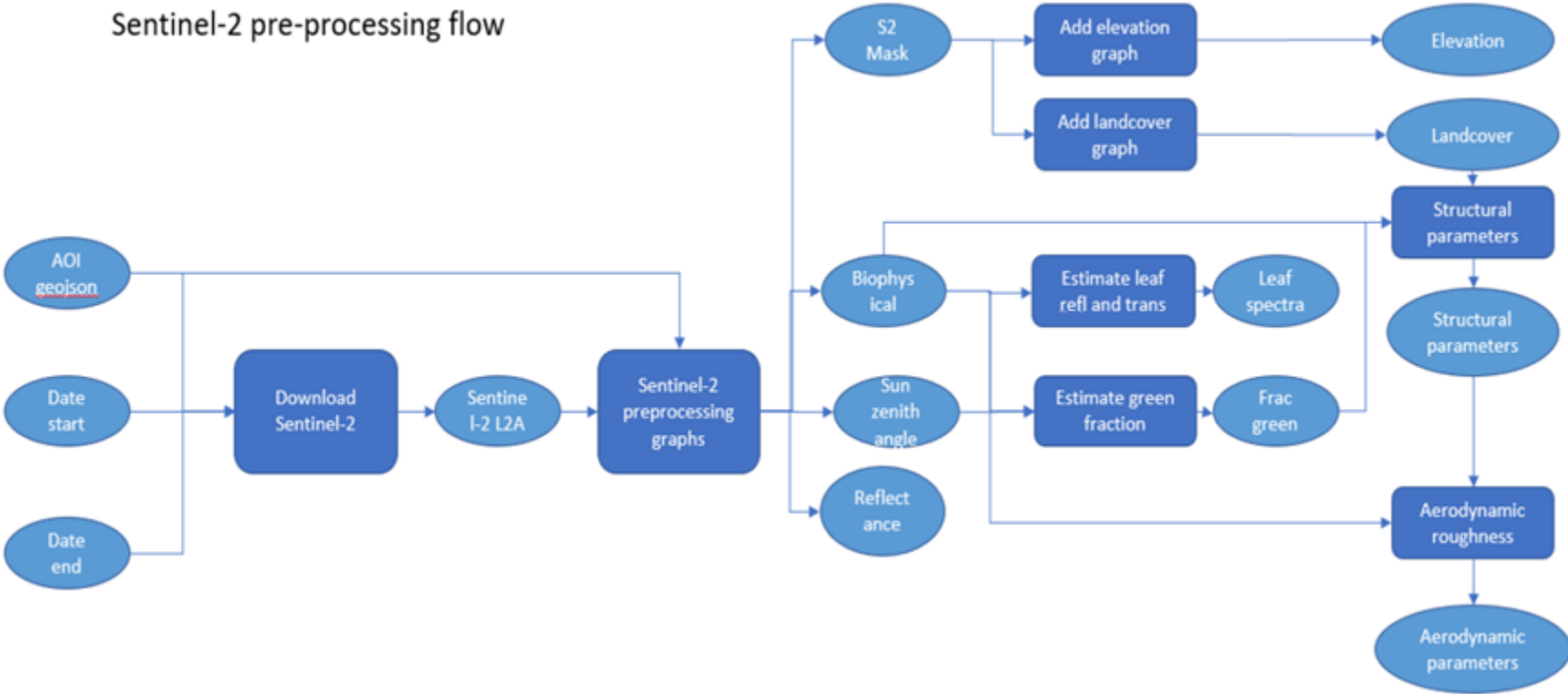
# ET – evapotranspiracijos algoritmas



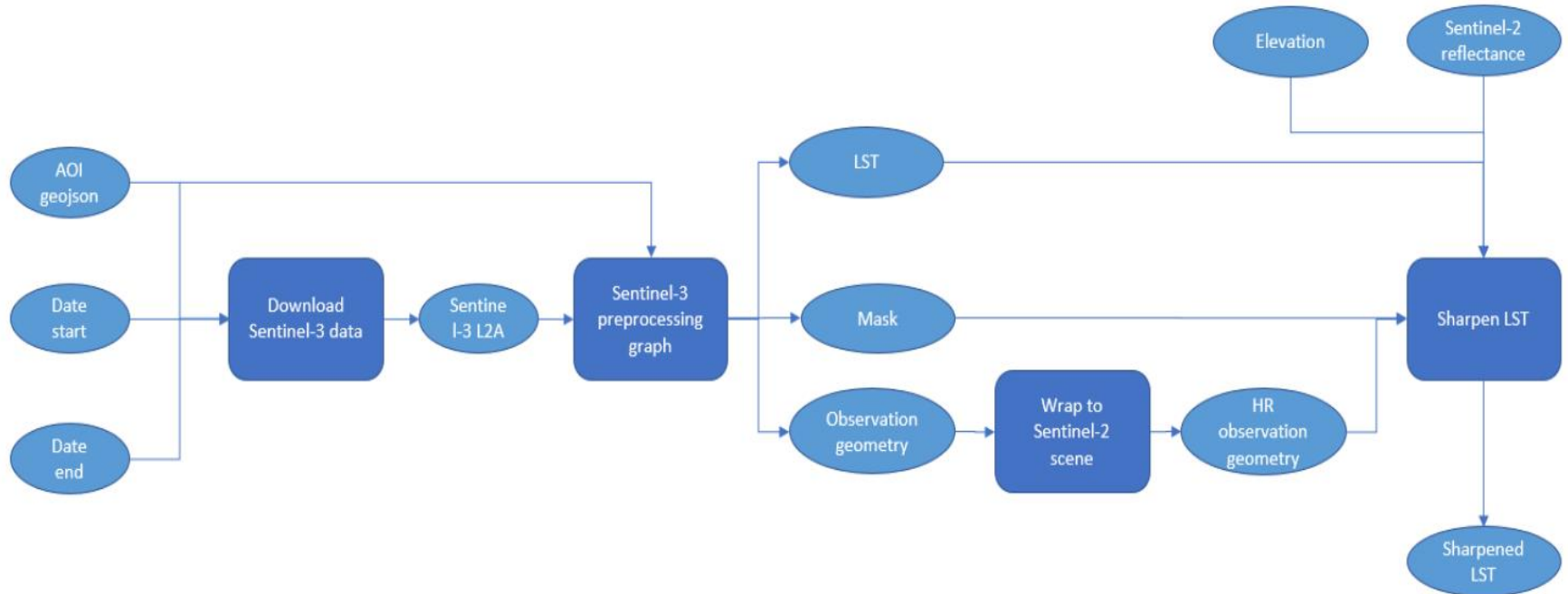
# Data Mining Sharpener



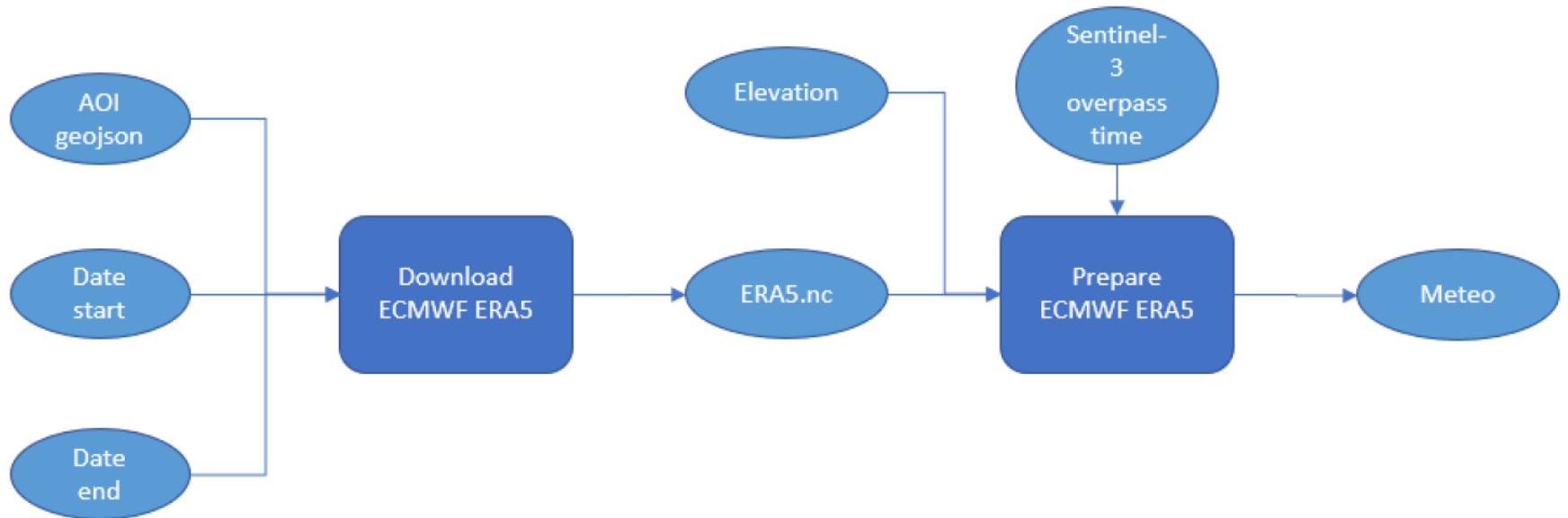
# Sentinel-2 pre-processing flow



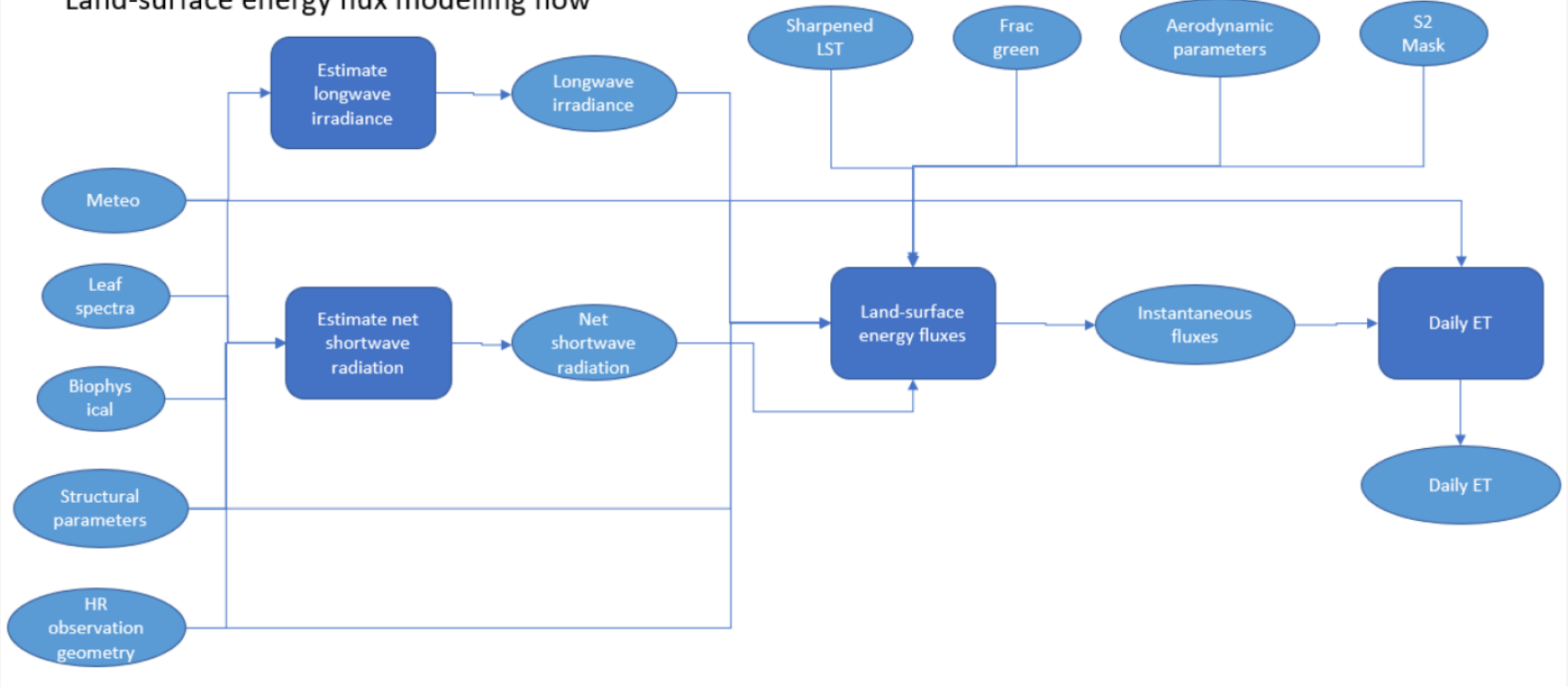
## Sentinel-3 pre-processing flow



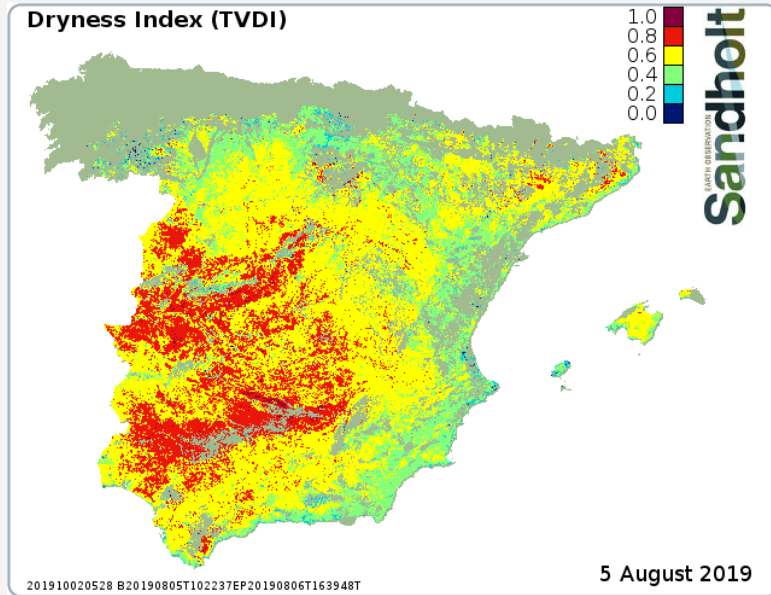
## ERA-5 pre-processing flow



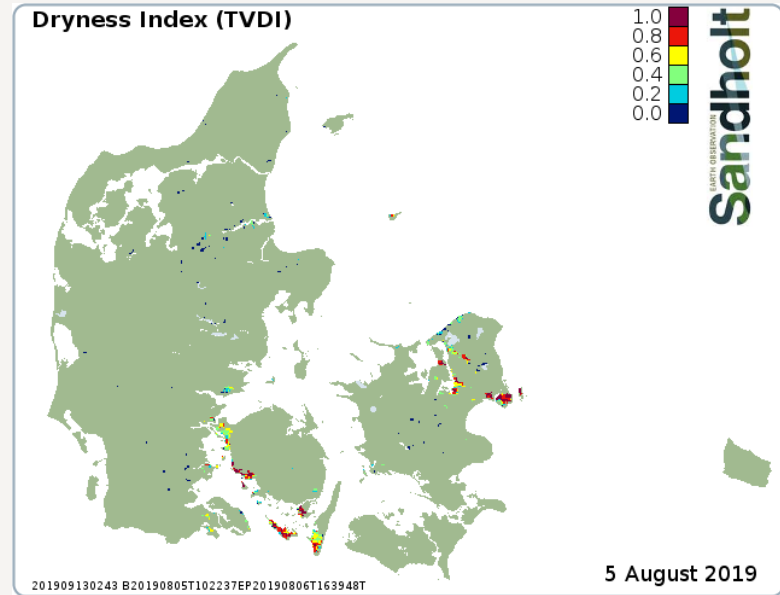
# Land-surface energy flux modelling flow



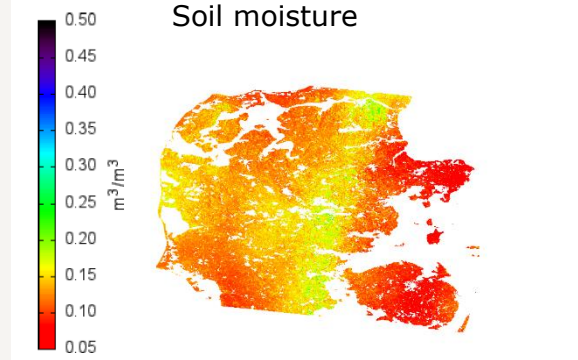
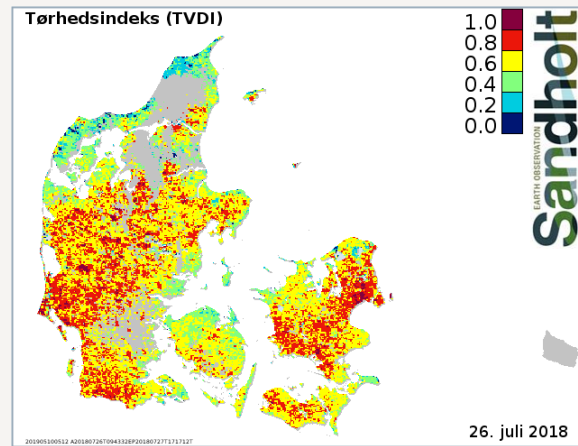
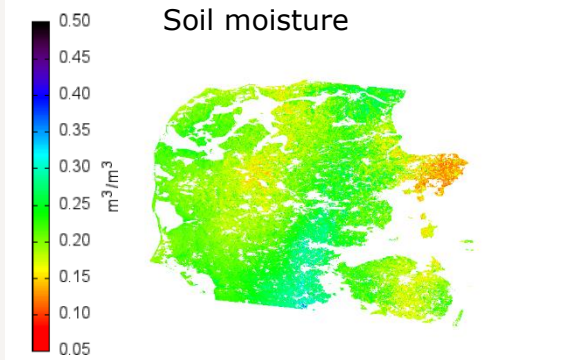
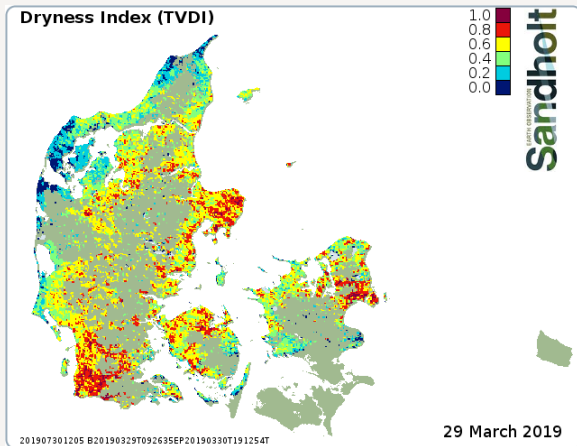
# Iššūkiai



Ispanija

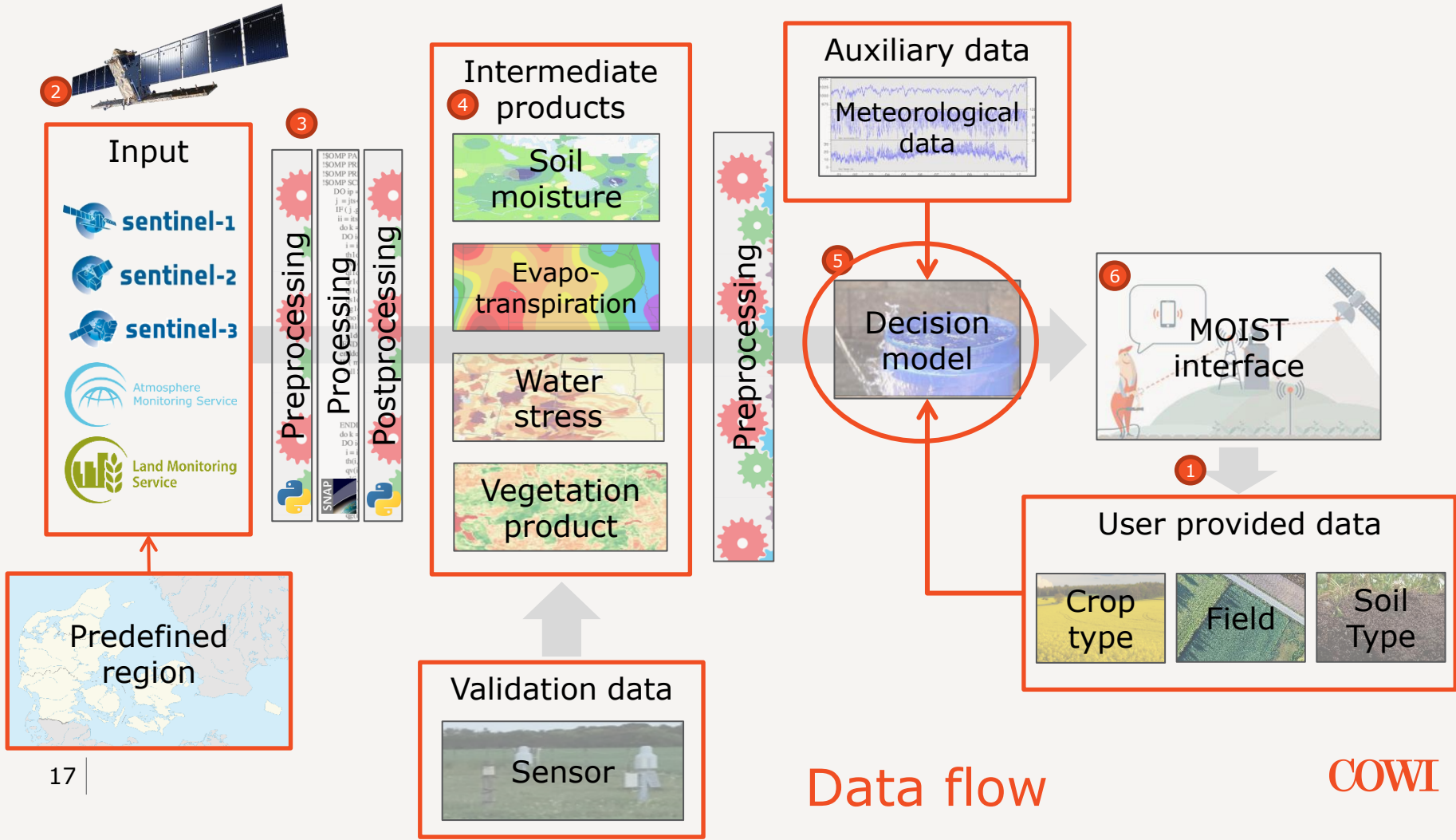


Danija



1km rezoliucija





Data flow

COWI

# Nuorodos

- > <https://github.com/radosuav/pyDMS> - Data Mining Sharpener
- > <https://github.com/hectornieto/pyTSEB> - evapotranspiracijos algoritmas
- > <http://esa-sen4et.org/outputs/software/> - evapotranspiracijos algoritmo įskiepis SNAP programai
- > <https://github.com/hectornieto/pyTVDI> TVDI algoritmas

