ESTHUB USAGE EXAMPLES

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TOPICS

Data access with catalogue (DHuS)

- Search by type, region, time period
- Download of Sentinel data products

Processing with processing system (Calvalus)

- Submission of parameterised processing requests
- Download of result data product sets
- Different processing workflows

ESTHUB

ESTHub is …

- Mirror of regional (Estonian) Sentinel data
- Processing facility with data processors

Data access with catalogue (DHuS)

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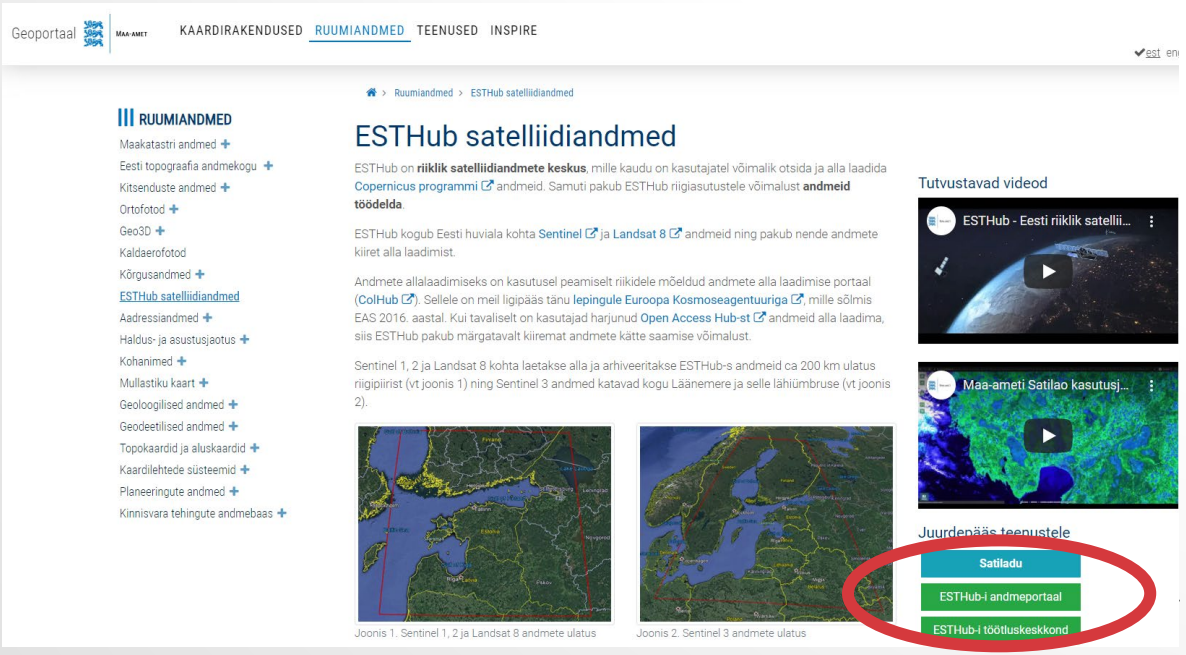
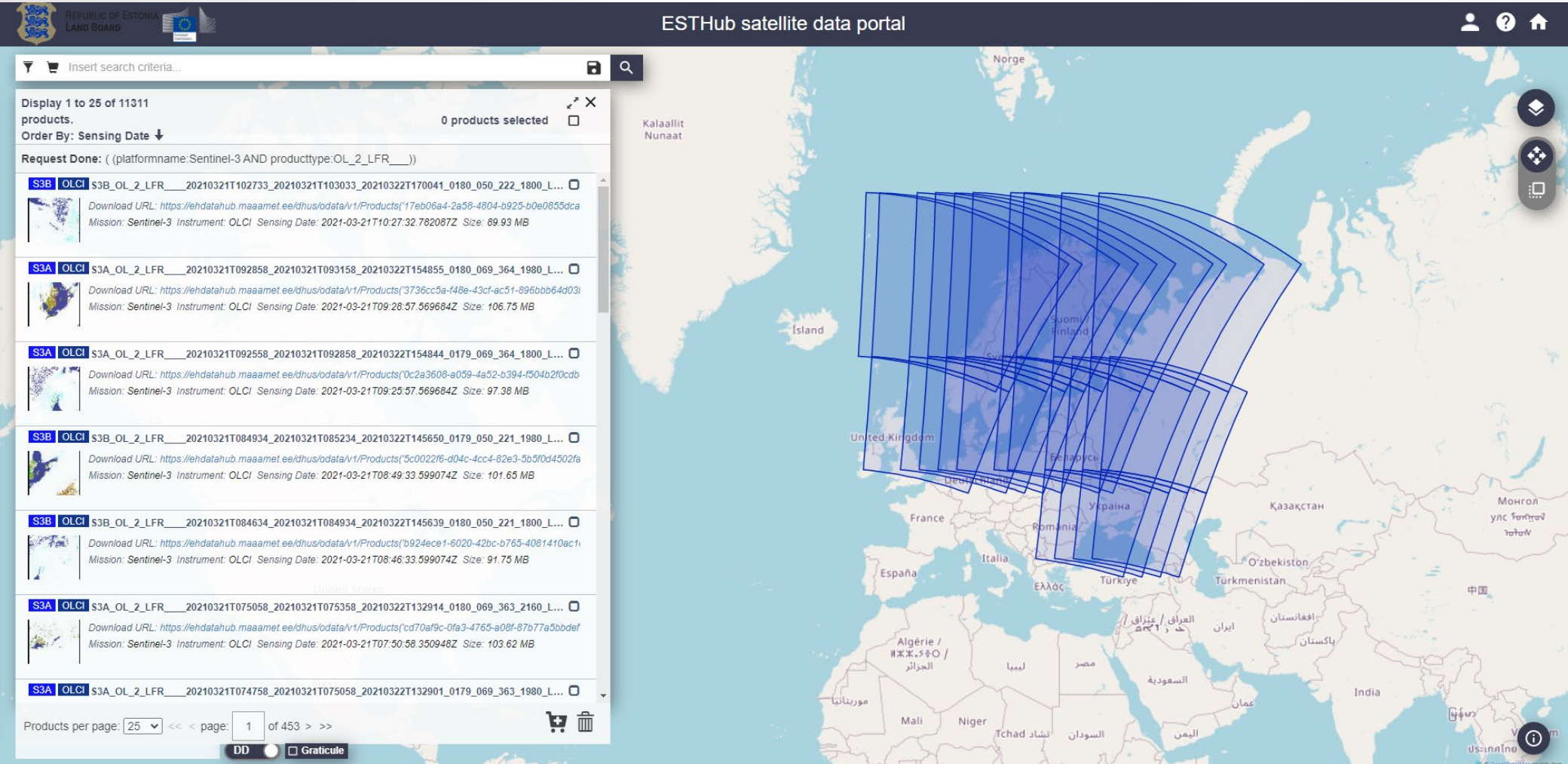
CATALOGUE DATA ACCESS

- Dedicated installation of open source DHuS software
- Software used for ESA SciHub, tailored for EstHUB
- Web portal to search, display and download Sentinel data over Estonia
- Access via the Maa-amet EstHUB webpage:

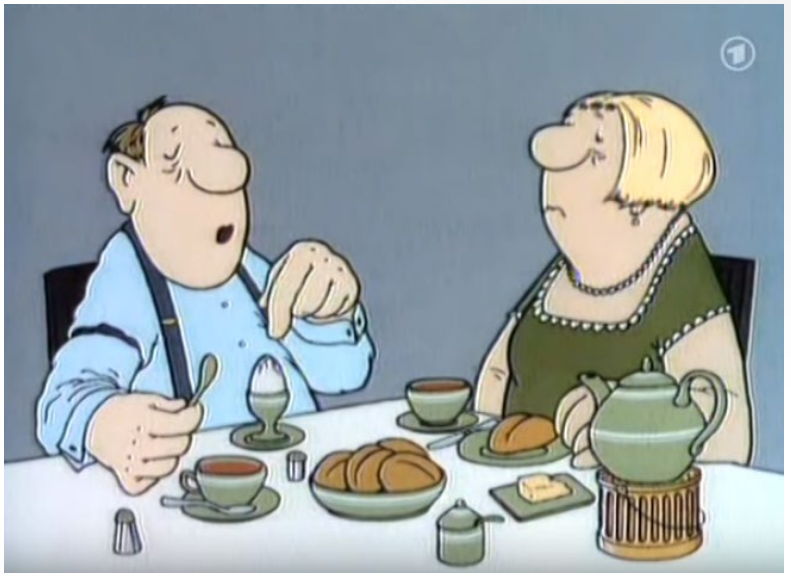


CATALOGUE DATA ACCESS



PROCESSING SERVICE

- 1 egg takes 4.5 minutes
- 160 eggs take …



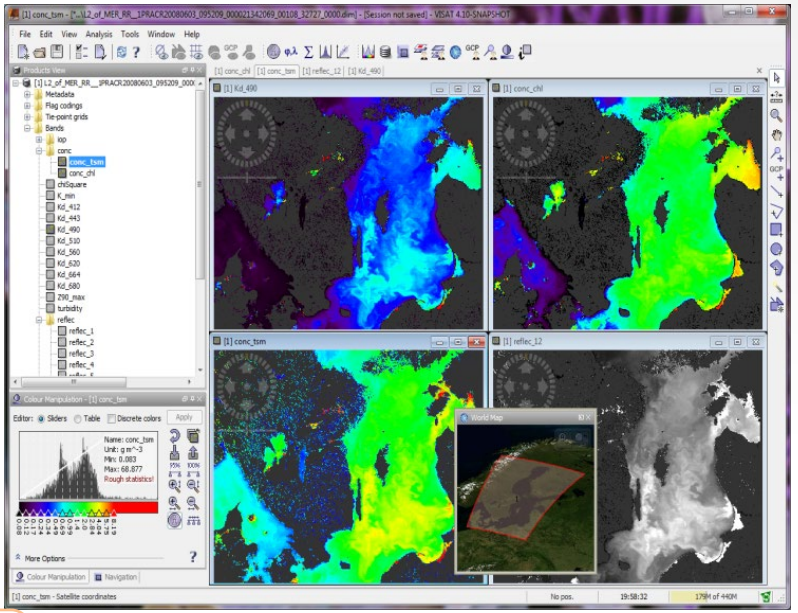
(source: German TV show 'Loriot')

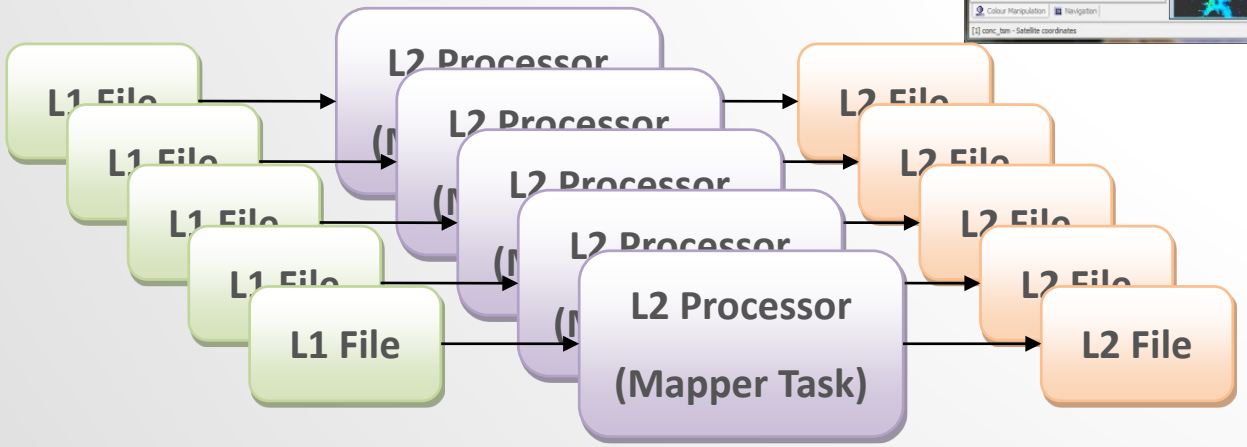
Options with a cluster:

- Process a time series within the same time as a single product
- Process a larger coverage within the same time as a single product

PROCESSING WORKFLOWS - L2 CONCURRENT PROCESSING

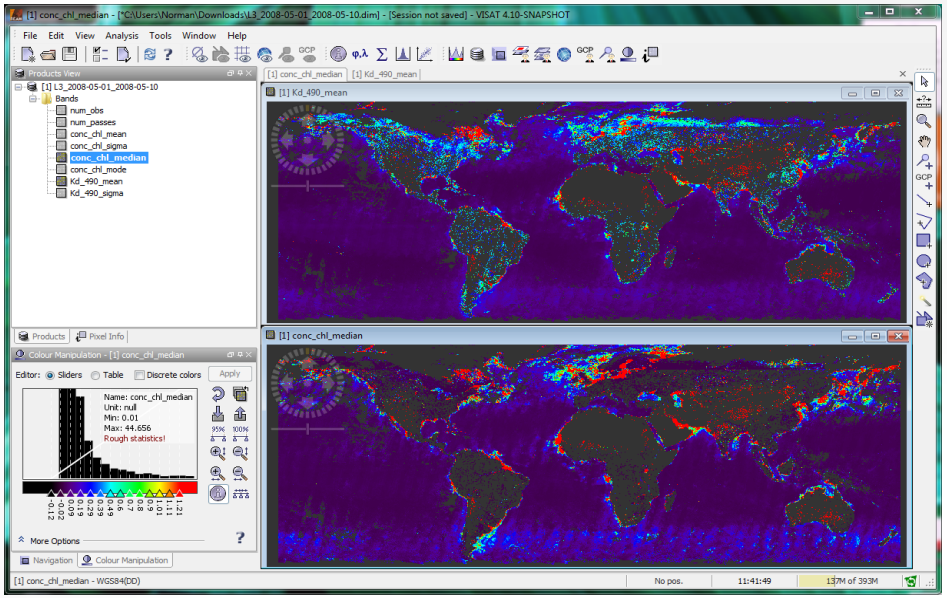
- MERIS RR L1, Baltic Sea, 3 days
- CoastColour NN L2 processor
- **6 minutes** (20 nodes)
- **output: L2 files**

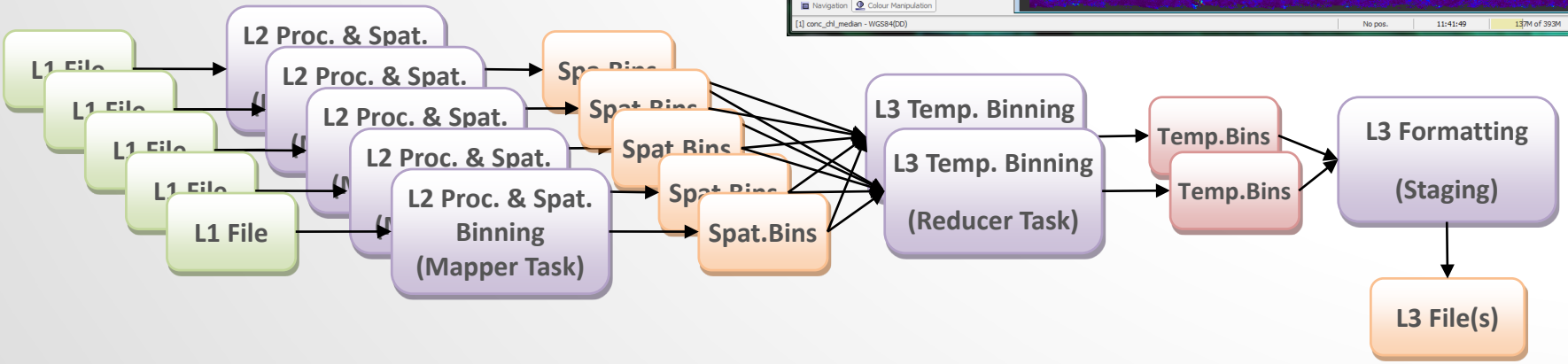




PROCESSING WORKFLOWS – SPATIO-TEMPORAL AGGREGATION

- MERIS RR L1, global, 10-day
- CoastColour C2W processor
- **1.5 hours** (20 nodes)
- **1 L3 product**





ESTHUB SYSTEM

- 20 (physical) nodes
  - Purpose: data storage and data-local processing
- Set of dedicated virtual machines, most important:
  - `ehmaster`:
    - controls processing tasks
    - controls data storage
  - `ehproduction01 + 02`:
    - control regular processing jobs
    - user-defined or system-wide (like geo-index)
  - `ehportal`:
    - runs the processing service GUI
  - `ehdatahub`
    - Runs the DHuS catalogue

PROCESSING SERVICE

Geoportaal | MAA-AMET KAARDIRAKENDUSED RUUMIANDMED TEENUSED INSPIRE

✔est eng

> Ruumiandmed > ESTHub satelliidiandmed

RUUMIANDMED

- Maakatastri andmed +
- Eesti topograafia andmekogu +
- Kitsenduste andmed +
- Ortofotod +
- Geo3D +
- Kaldaerofotod
- Kõrgusandmed +
- ESTHub satelliidiandmed
- Aadressiandmed +
- Haldus- ja asustusjaotus +
- Kohanimed +
- Mullastiku kaart +
- Geoloogilised andmed +
- Geodeetilised andmed +
- Topokaardid ja aluskaardid +
- Kaardilehtede süsteemid +
- Planeeringute andmed +
- Kinnisvara tehingute andmebaas +

ESTHub satelliidiandmed

ESTHub on **riiklik satelliidiandmete keskus**, mille kaudu on kasutajatel võimalik otsida ja alla laadida Copernicus programmi andmeid. Samuti pakub ESTHub riigiasutustele võimalust **andmeid töödelda**.

ESTHub kogub Eesti huviala kohta Sentinel ja Landsat 8 andmeid ning pakub nende andmete kiiret alla laadimist.

Andmete allalaadimiseks on kasutusel peamiselt riikidele mõeldud andmete alla laadimise portaal (ColHub). Sellele on meil ligipääs tänu lepingule Euroopa Kosmoseagentuuriga, mille sõlmis EAS 2016. aastal. Kui tavaliselt on kasutajad harjunud Open Access Hub-st andmeid alla laadima, siis ESTHub pakub märgatavalt kiiremat andmete kätte saamise võimalust.

Sentinel 1, 2 ja Landsat 8 kohta laetakse alla ja arhiveeritakse ESTHub-s andmeid ca 200 km ulatus riigipiirist (vt joonis 1) ning Sentinel 3 andmed katavad kogu Läänemere ja selle lähiümbruse (vt joonis 2).

Joonis 1. Sentinel 1, 2 ja Landsat 8 andmete ulatus

Joonis 2. Sentinel 3 andmete ulatus

Tutvustavad videod

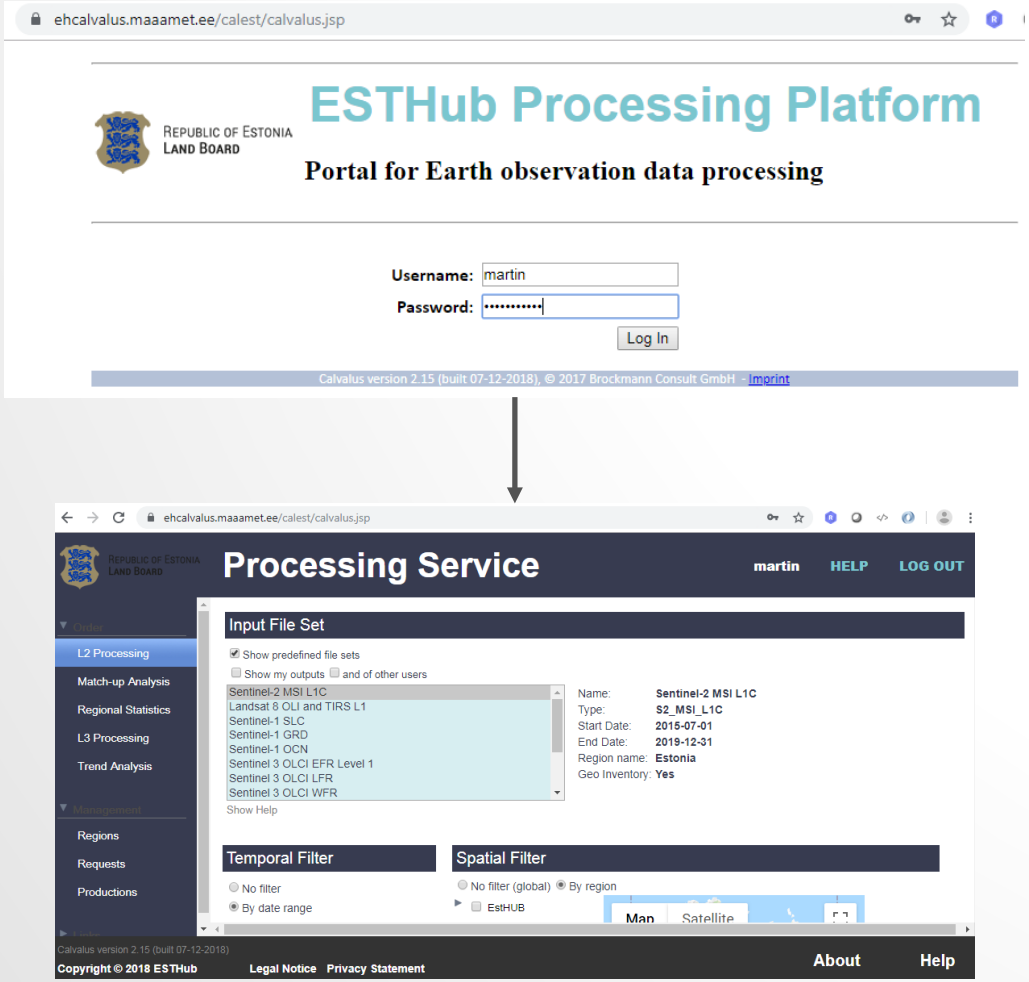
Juurdepääs teenustele

- Satiladu
- ESTHub-i andmeportaal
- ESTHub-i töötluskeskkond

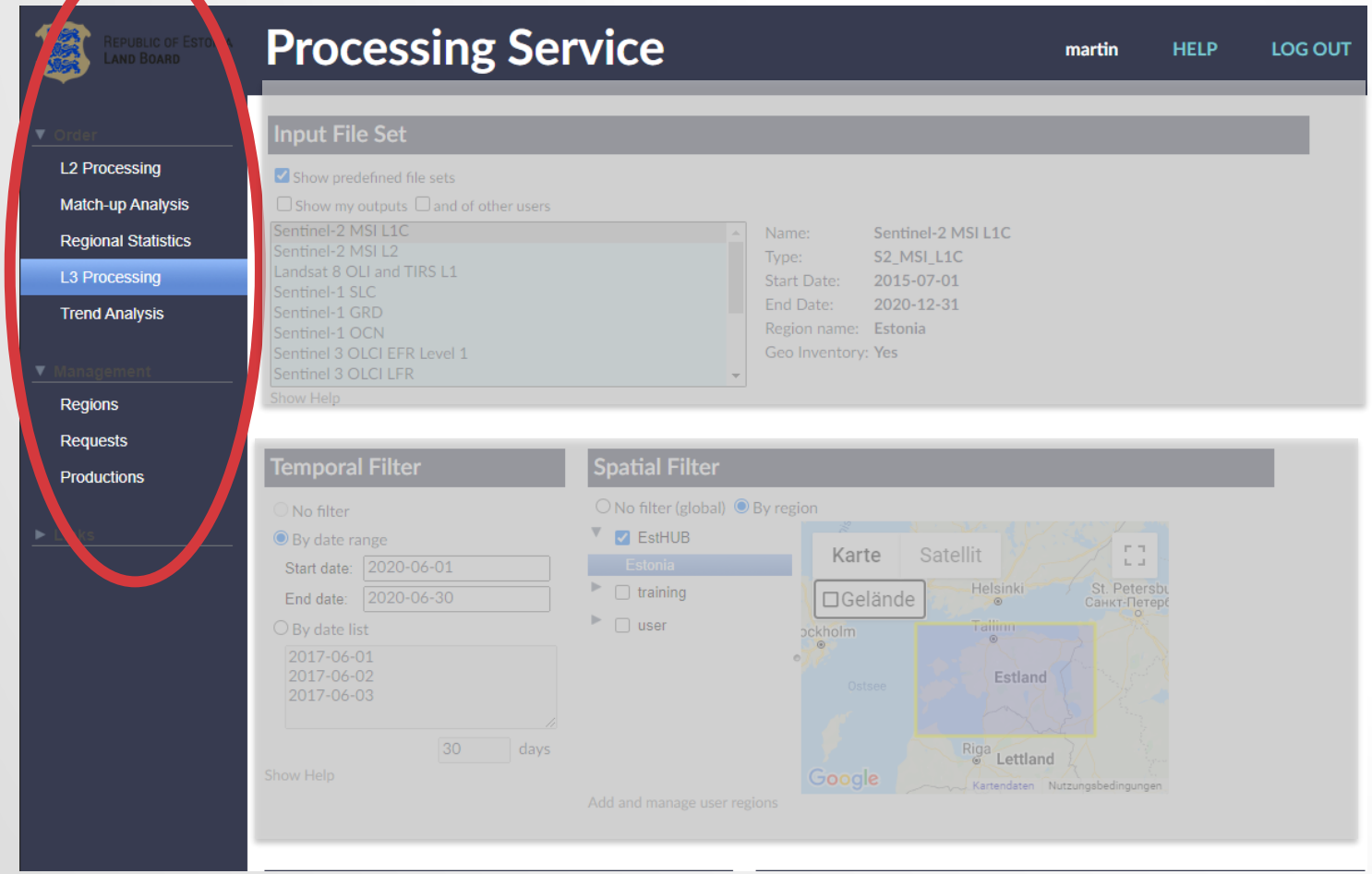
PROCESSING SERVICE

- Access via esthub.maaamet.ee
- Authentication with user name and password
- Web interface for
  - processing request composition
  - request submission and monitoring
  - result data access

PROCESSING SERVICE



WEB INTERFACE – INPUT SELECTION

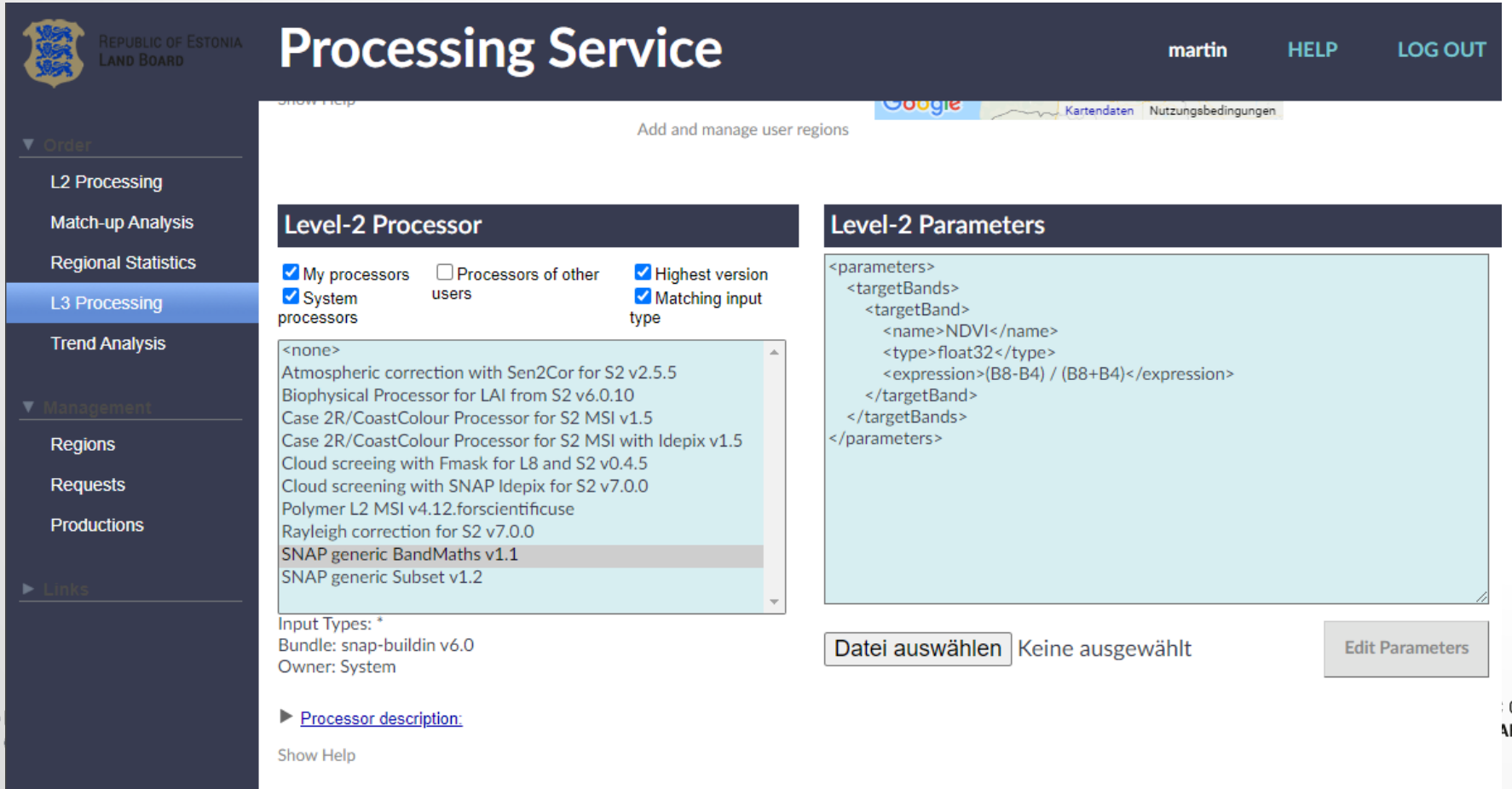


Input selection by

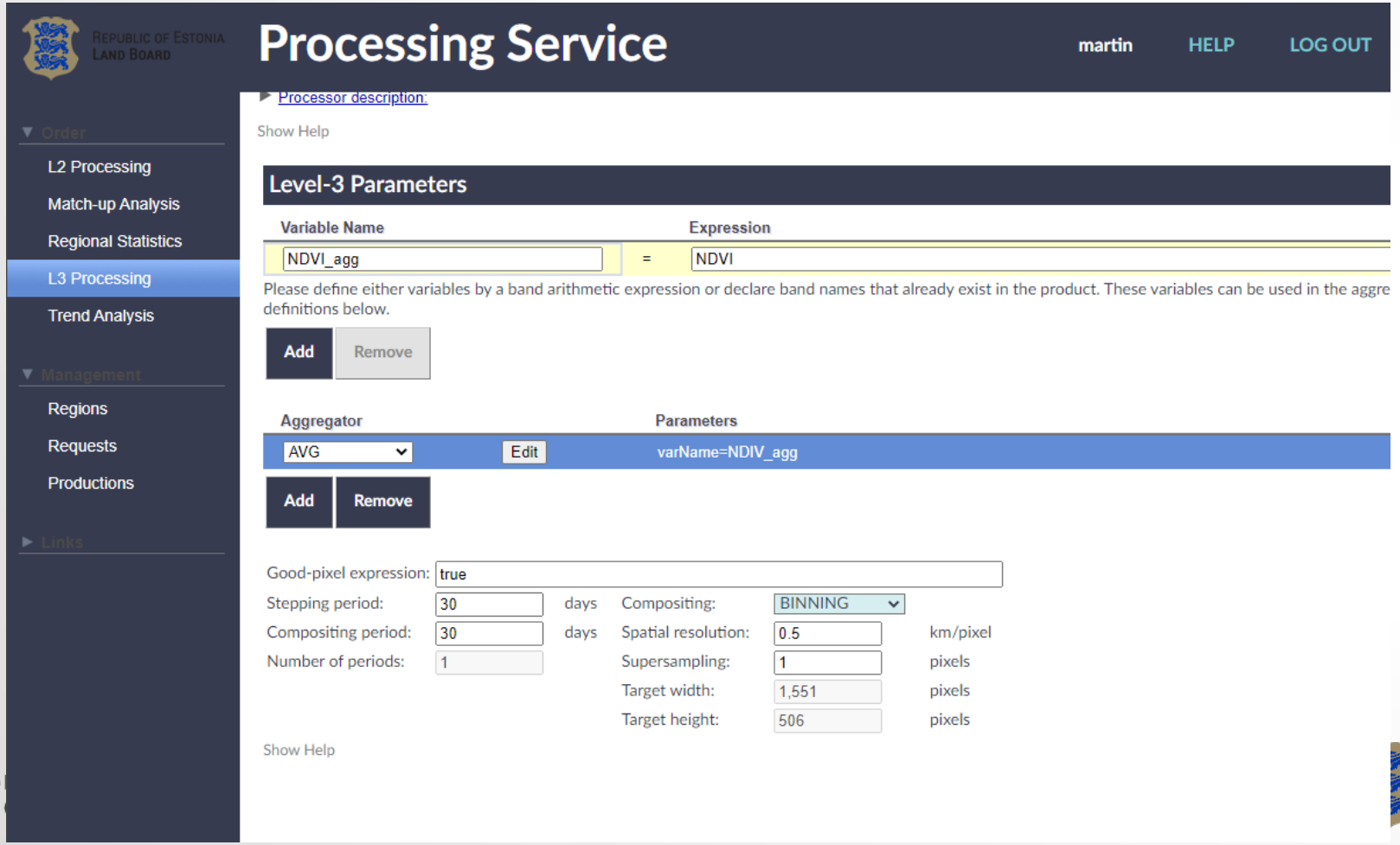
- dataset
- time period
- region

WEB INTERFACE – PROCESSOR SELECTION

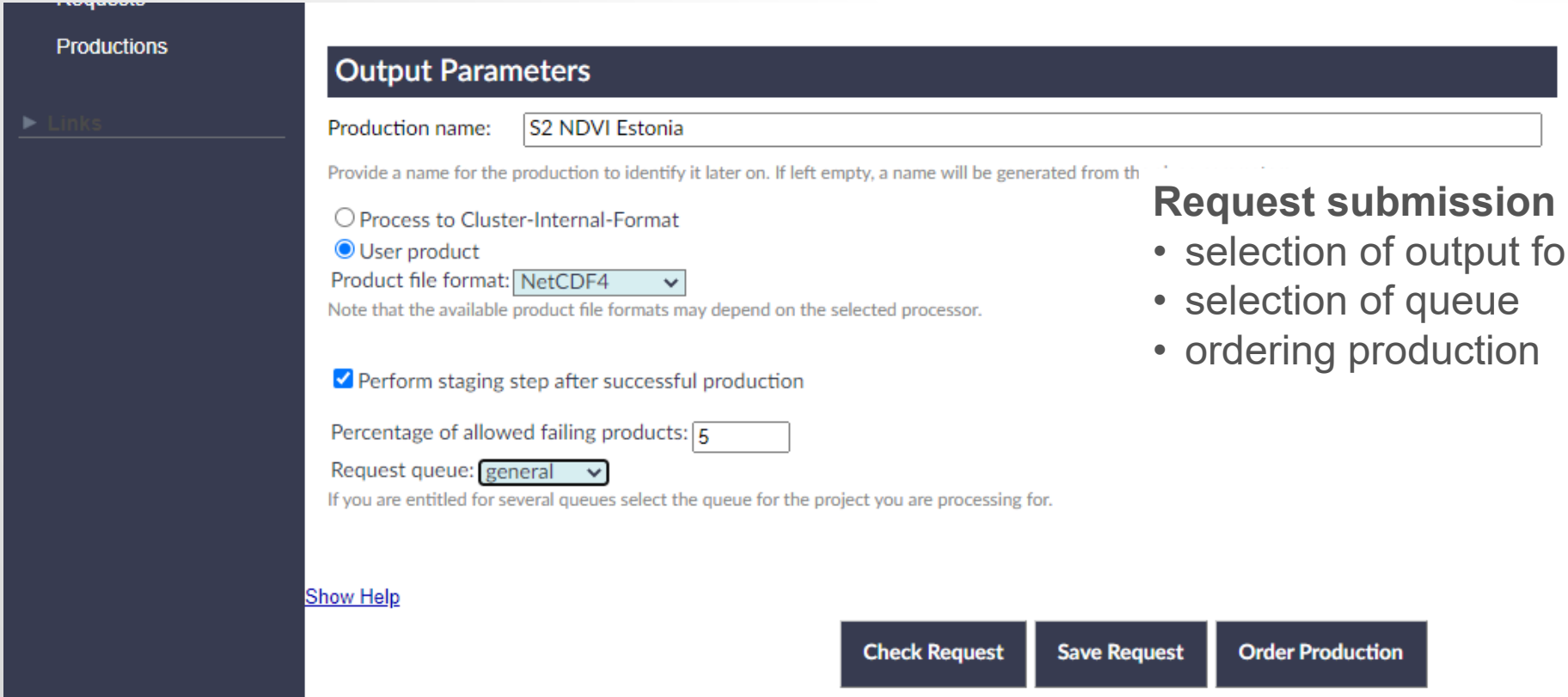
Processor selection from
- system-provided processors
- user-provided processors



WEB INTERFACE – PARAMETERISATION



PROCESSING SERVICE – REQUEST SUBMISSION



Request submission

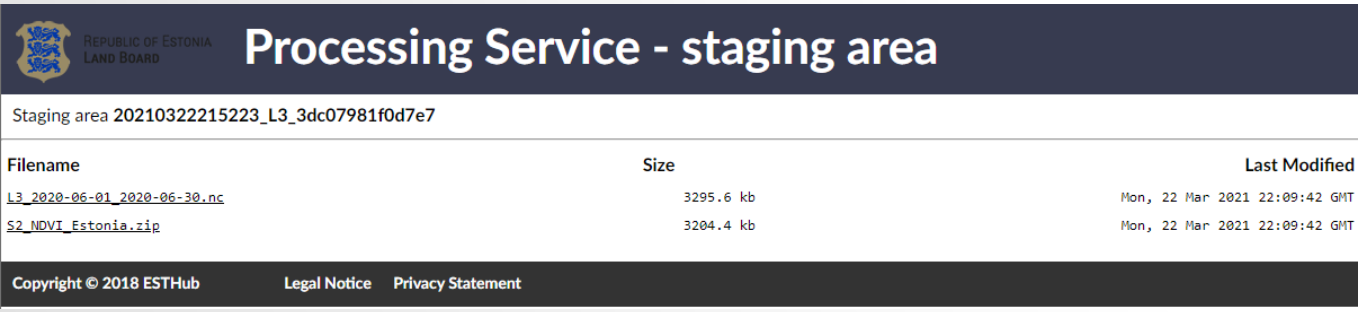
- selection of output format
- selection of queue
- ordering production

PROCESSING SERVICE – PROCESSING STATUS + RESULTS

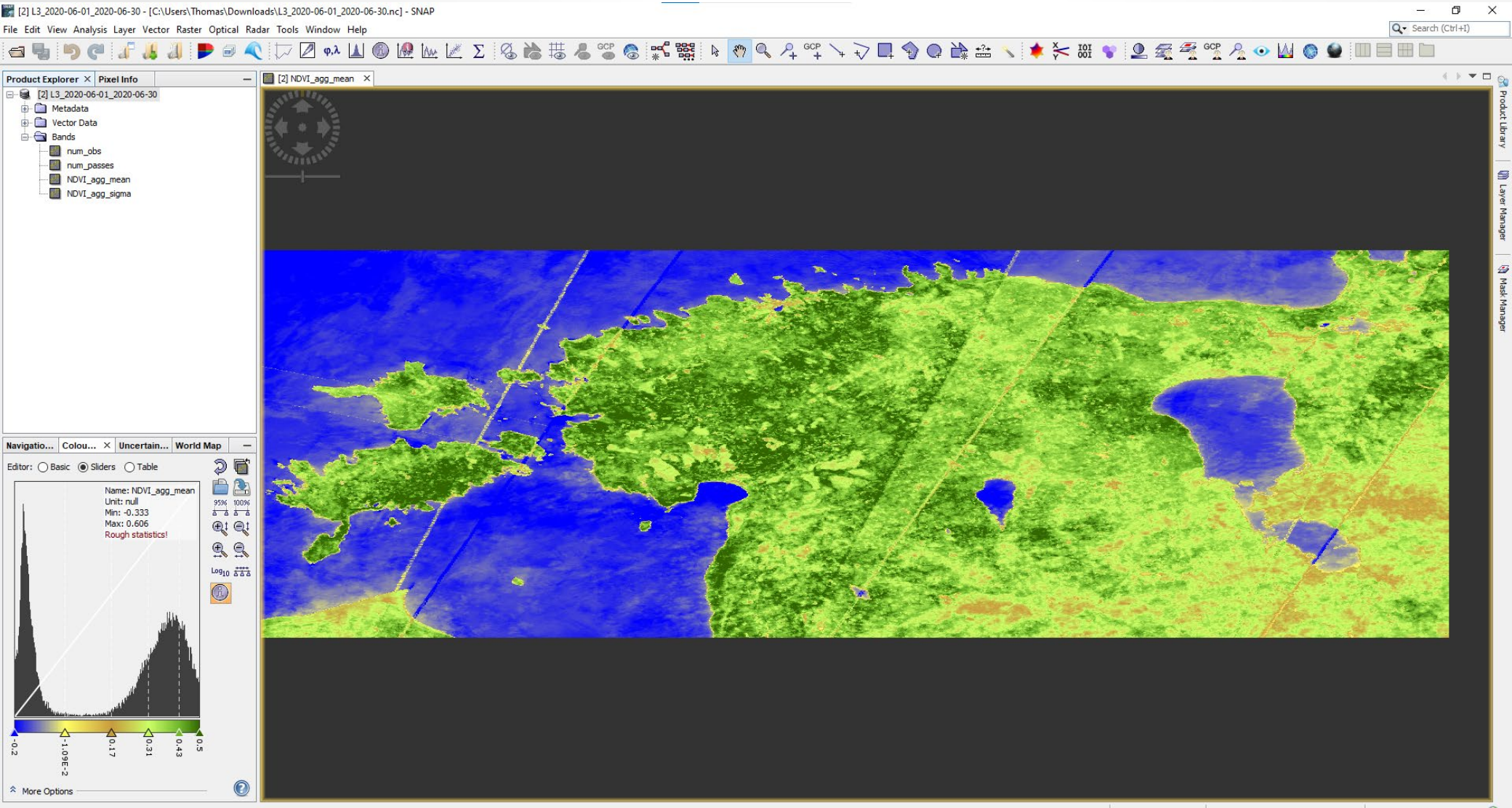
Active and completed productions

- Status and progress
- Edit and re-submit

WEB INTERFACE OF THE PROCESSING SERVICE



Access to results

- Use on the platform for further processing
- Download

INSPECT RESULTS IN SNAP