Group 3: Toolboxes and training

Q1

Do you use other tools to process Sentinel data (e.g. QGIS with Orfeo ToolBox (OTB), Python with osgeo, commercial tools)? Which and why?

- The group is using GRASS, Python ecosystem (incl. osgeo, numpy, pandas, jupyter), QGIS, ENVI, eCognition, SNAP, ArcGIS, sen2cor, Fmask
- GRASS: powerfull (handle huge amount of data via cloud, HPC) and time series module (TGRASS)
- Python: rich 3rd party libraries (snappy), easy to program and to learn, huge user group, easy to get answers, all platforms, similar to R, jupyter programming interface

Q1

- QGIS: easy to understand and open source, easy to extend, plug-ins, write own plug-ins relatively easy, use other tools from QGIS, graphical user interface and cartography output
- ENVI: rich commercial image processing tool
- eCognition: rich functionality for object oriented analysis, esp. suited for high resolution data
- SNAP: easy access to ESA optical and SAR data and other EO data, scientific work flows, extendible, API for Python.
- sen2cor: free tool to do AC, can be used from command line, maintaines the state of the processing (smart)
- Fmask: fast and easy to use on Landsat and S2

Summary

- Large set of tools in use (by even a small group of 4 people)
  - Each tool has its strengths and weaknesses
  - Each tool has its justification to be used
- Coordination among tools is important
  - Overview of available tools
  - Documentation about strengths and weaknesses
  - Interoperability
  - ESA to coordinate its various developments better (instrument toolboxes, tools developed in R&D projects)
- Tools should implement FULL compliance with standard
  - Finding out that a certain dataset can’t be read after 3 days of work is annoying
- Training is needed
  - Open tools
  - Python for Earth Observation
- Documentation should be written by people USING the tool, not developing it