

From NEST to SNAP, user is producing and talking

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11/09/2019

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- **Next ESA SAR Toolbox (NEST)**

- History of Development

- **SNAP**

- History of Relies and Development

- What works in SNAP and what doesn't?

- What extra SNAP features would help our work?

- Did SNAP help us achieve everything that we expect it? **Case Study!**

- **STEP FORUM**



• Next ESA SAR Toolbox (NEST) 2009



<https://earth.esa.int/web/nest/home>

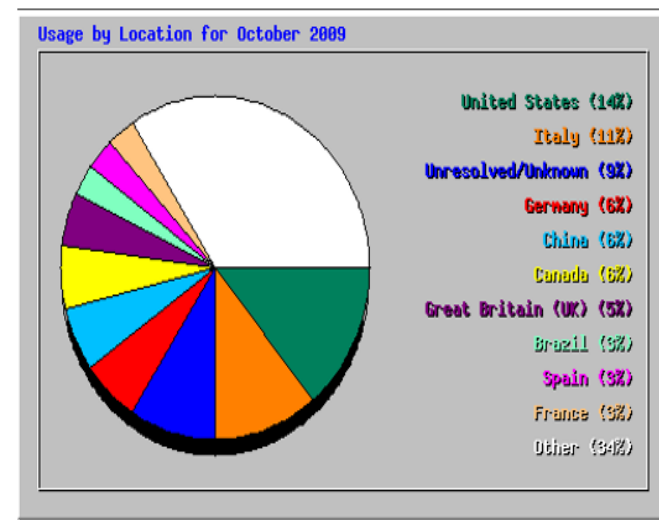
NEST Users

–2000+ Registered Users

–268417 Total Page Views

NEST Website Visits

- 14% United States
- 11% Italy
- 9% Unresolved/Unknown
- 6% Germany
- 6% China
- 6% Canada
- 5% Great Britain
- 3% Brazil
- 3% Spain
- 3% France
- 3% Netherlands
- 3% Russian Federation
- 2% Czech Republic
- 2% Austria
- 2% Poland
- 2% Greece
- 2% Sweden
- 2% India
- 1% Australia
- 1% Norway
- 14% All Others

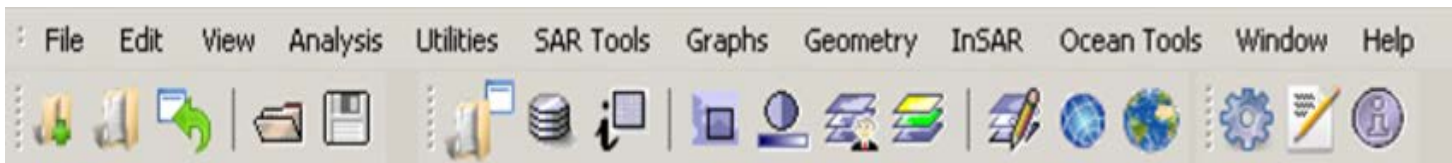


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• Next ESA SAR Toolbox (NEST) 2009



Approaching the data

- The Display and Analysis Tool
- How to access data
- How to create a Project

Supported Product Formats:

SAR Data Products

- o ENVISAT ASAR, MERIS, AATSR
- o ERS AMI 1 & 2 (CEOS & Envisat format from PGS and VMP)
- o JERS SAR
- o ALOS PALSAR
- o ASAR Wave Products
- o RADARSAT 1
- o RADARSAT 2
- o TerraSar-X
- o Cosmo-Skymed

Basic SAR Tools

- Subset
- Apply Orbit File
- Radiometric calibration
- Coregistration
- Speckle filtering

Advanced SAR Tools

- Multilooking
- Terrain correction
- Mosaicking
- Ocean Tools



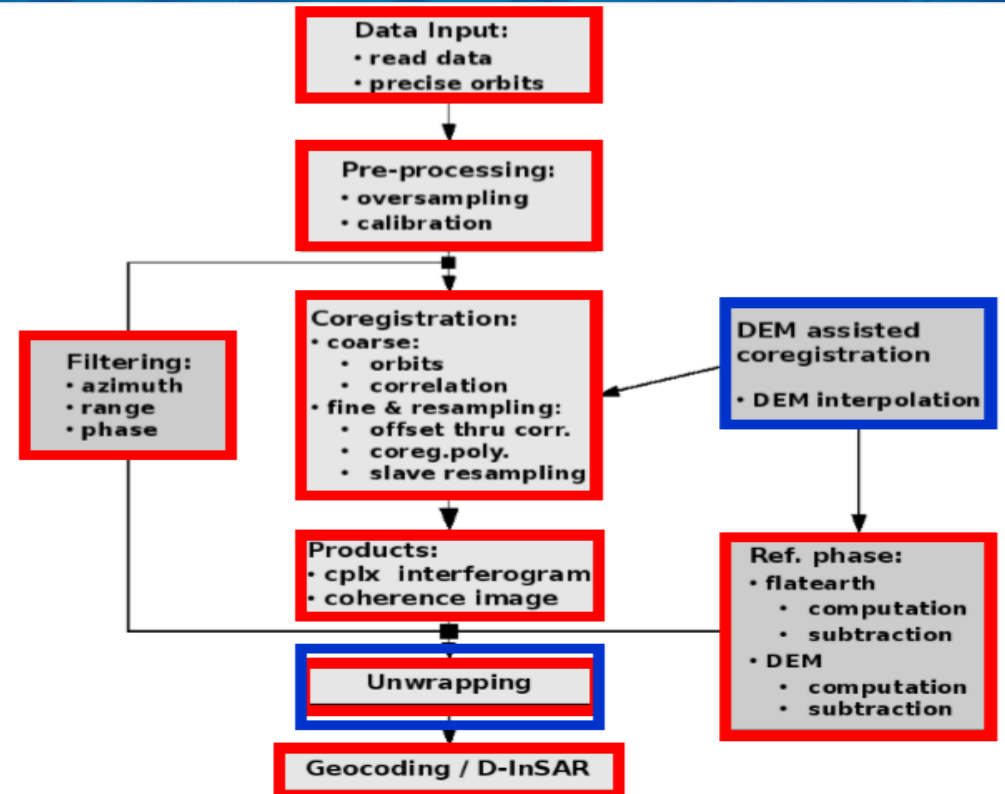
• Next ESA SAR Toolbox (NEST) 2012 - 2013

“Example of a full processing for DEM generation using NEST “

“Generation of an interferogram over the ETNA Vulcano,

Sicily (Italy), using a ERS1&2 Tandem couple”

NEST 4C-1.1



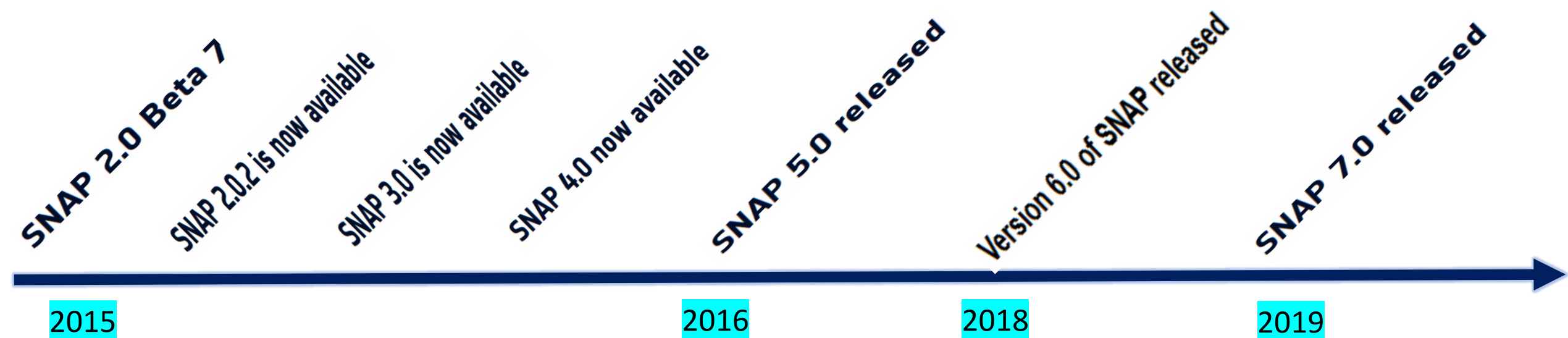
 Available in 4C
 Available in 5A-1.0 (Beginning 2013)

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- SNAP chronological history



- SNAP

SNAP 3.0 is now available

The SNAP development team is pleased to announce the final SNAP 3.0 release which is now waiting to be [downloaded](#).

Beside bug fixes and improvements, several new features are waiting for you. For example

- a new Resampling Operator has been introduced.
- GPF operators can now handle multi-size products
- quicklooks are now supported in the Product Explorer and the Product Library

For more information about changes made for this release please have a look at the release notes of the different projects: [SNAP](#), [S1TBX](#), [S2TBX](#), [S3TBX](#), [SMOS Box](#).

Enjoy the new release
The SNAP Team

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- SNAP

SNAP 4.0 now available

SNAP

- Supervised Classification – Random Forest, KNN, Maximum Likelihood, Minimum Distance

S1TBX

- Support for S1B
- Correction to precise orbits which caused phase jumps
- Integer interferogram combination
- Double different interferogram within the burst overlap
- Added new SeaSat reader

S2TBX

- Only multi-size product reading for L1C MSI data
- Reflectance values are now scaled for L1C MSI data
- Several reader optimisation
- New L2B Biophysical processors
- Integrated IdePix Processor for L1C MSI data
- New Radiometric Indices Processor

S3TBX

- New colour classification based on the Forel–Ule scale
- Sentinel-3 Reader have been improved according to errors and format changes
- Performance of radiance-to-reflectance conversion has been improved



- SNAP

SNAP 7.0 released

<https://step.esa.int/main/snap-7-0-released/>

The SNAP development team is pleased to announce a new SNAP release.

The different installers for the supported platforms can be [downloaded](#). Besides bug fixes and improvements, several new features are waiting for you. For example:

- New readers: AATSR L1 data in SAFE format, S-1 on AWS, RCM products, PAZ, ICEYE, RISAT-1, ALOS-2 in GeoTiff, Kompsat-5 in GeoTiff, MUSCATE, Landsat L2, Landsat ESA products, Pleiades, WorldView1-3, IKONOS, ALOS AVNIR2-PRISM
- Allows disabling the automated access to remote auxiliary data. Needed in cluster environments without internet access.
- Terrain Correction of ALOS-1 from ESA On the fly products
- Automatic orbit download via QC Rest API
- Compact polarimetric tools
- TOPS Deramp/Demod operator
- Calibration for RCM, PAZ and ICEYE SLC
- Improved Terrain Flattening & thermal noise filtering
- Support for multi-size: subset, collocation, copy pixel information, create subset action, export mask pixels, magic wand, export transect pixels, add elevation
- Operator for the detection and removal of Prompt Particle Events on OLCI
- Support multiple slaves in collocation operator
- Improve resampling operator
- Smart configurator enhancements
- Graphical User Interface for Remote Execution
- Virtual File System(VFS) : mechanism to access files from remote site
- Added OTB bundle

For more information about changes made for this release please have a look at the release notes of the different projects: [SNAP](#), [S1TBX](#), [S2TBX](#), [S3TBX](#), [SMOS Box](#), [PROBA-V Toolbox](#)

- SNAP

- What works in SNAP and what doesn't?

Move polygons between vector containers?

■ snap



1sarah



marpet

Jul 8

Hi 1sarah,

Indeed the handling of shapes and geometries is not as good as could be.

SNAP is still lacking some GIS functionality because of its origin from the raster data domain. If you want to combine multiple shapefiles I would suggest to use QGIS.

There, it should be easy to [merge shapfiles](#) ¹.

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- SNAP

What works in SNAP and what doesn't?

SBAS-InSar processing in SNAP

■ s1tbx



sentinelgyb

Apr '18

Hi, guys. Now I wonder whether the latest SNAP Version can do SBAS-InSar processing or not?
Thanks.



mengdahl 🇩🇪

Jul 5

We will support interfacing with PyRate in the future so unfortunately the wait not over yet, but it will come! The current target is SNAP8.0 that should be released in ~6 months.

GitHub



GeoscienceAustralia/PyRate

A Python tool for estimating velocity and time-series from Interferometric Synthetic Aperture Radar (InSAR) data - GeoscienceAustralia/PyRate



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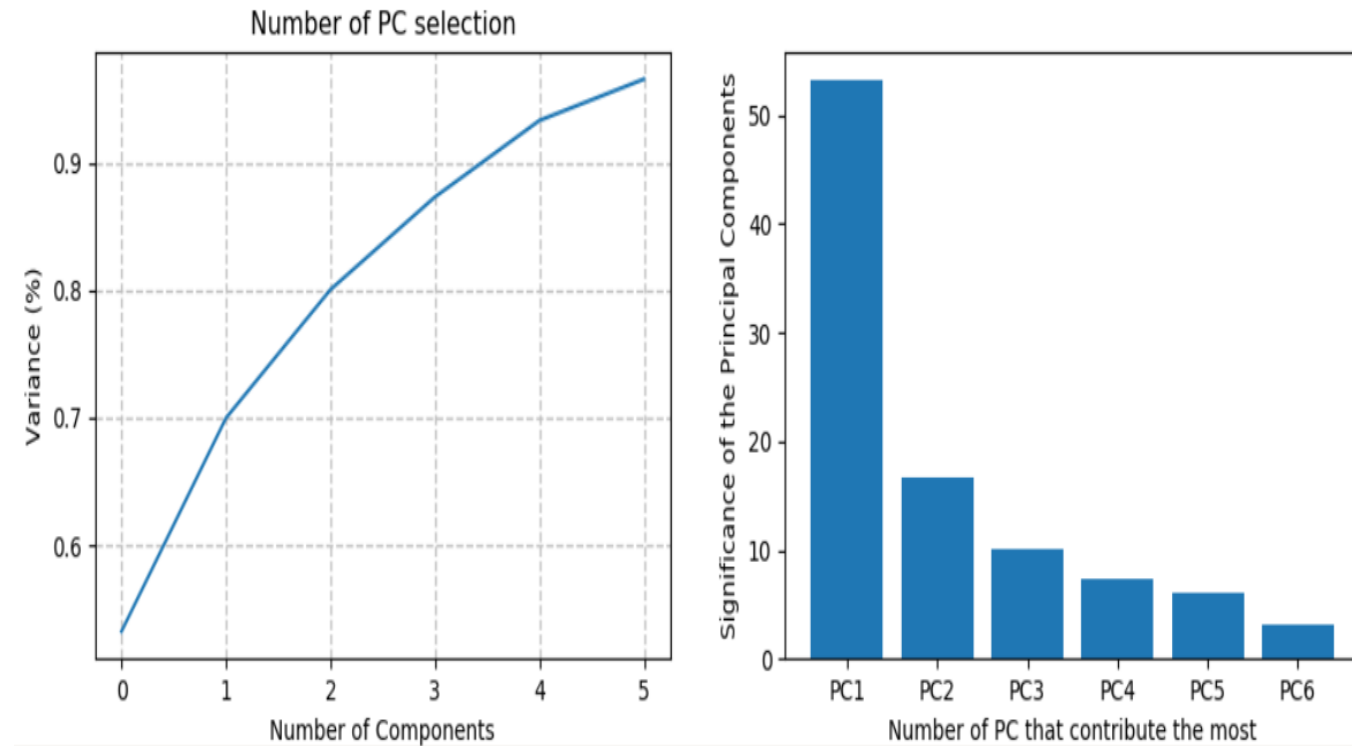


- SNAP
 - What works in SNAP and what doesn't?
 - Create stacking of multiple interferograms to get the mean of displacement for long-term, is still not supported by SNAP.
 - SNAPHU is an implementation of the Statistical-cost, Network-flow Algorithm for Phase Unwrapping proposed by Chen and Zebker. (The only Algorithm is available...),,,
 - There is no mathematical model available as matrix results, could represents the accuracy of the unwrapping results.

- SNAP

- What works in SNAP and what doesn't?

Principle Components Analysis (PCA)



Python Script, is written by Ioannis Gkanatsios

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- SNAP
 - What works in SNAP and what doesn't?

Python – SNAPPY,

Still Windows OS. Users are struggling of **Conf. SNAPPY**, the reason is the Python's version.

Update SNAP related issues by using the last updated python's versions could be the solution.



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- SNAP

- What extra SNAP feature would help our work?

I think this should be a link available Titled

[Users and developers suggestions](#)

In order to let all users and developers adding up their suggestions and propositions.



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- SNAP

- Did SNAP help us achieve everything that we expect it to? **Case Study!**



Article

Refugee Camp Monitoring and Environmental Change Assessment of Kutupalong, Bangladesh, Based on Radar Imagery of Sentinel-1 and ALOS-2

Andreas Braun ^{1,*}, Falah Fakhri ² and Volker Hochschild ¹

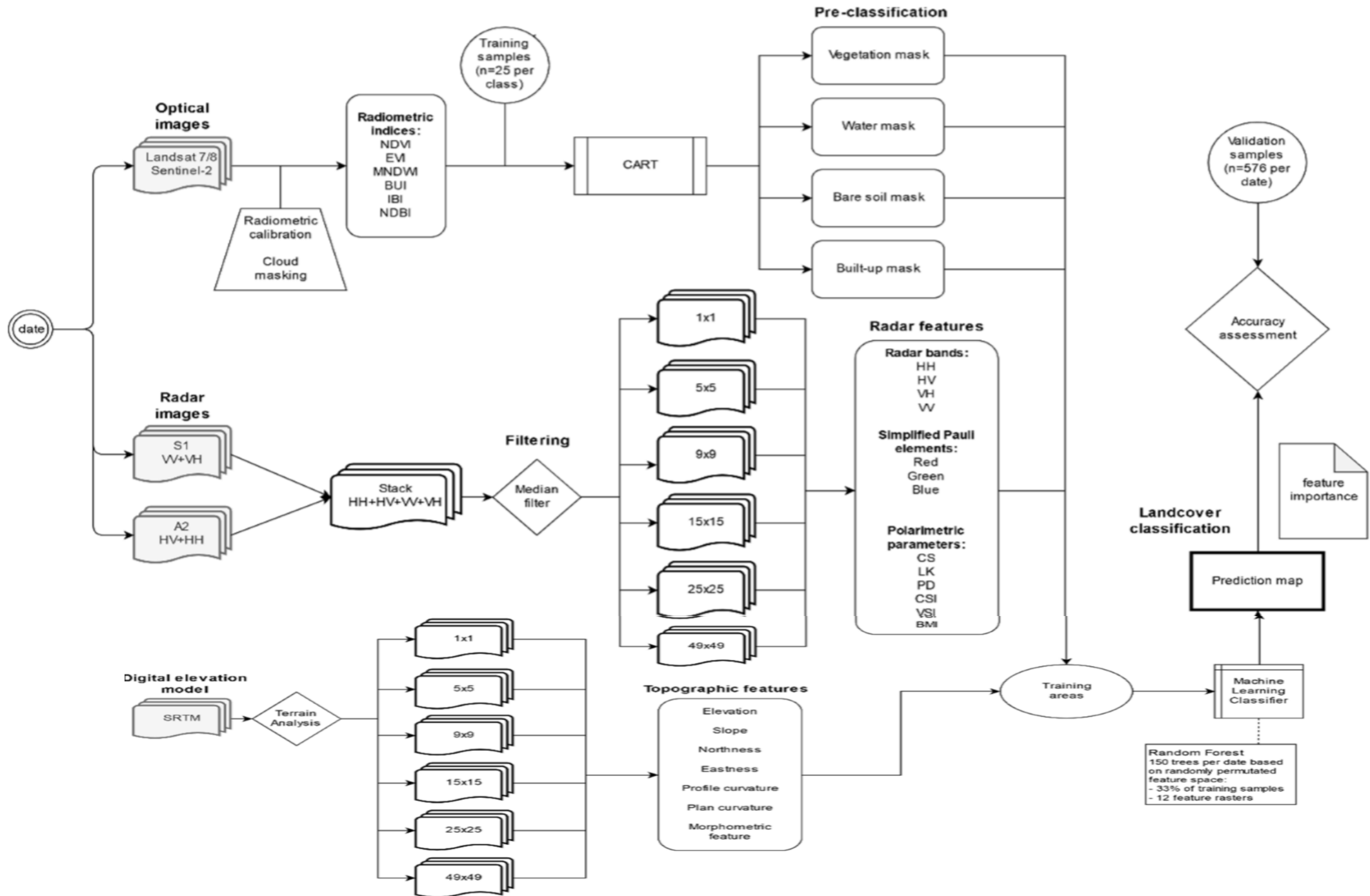
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Received: 23 June 2019; Accepted: 28 August 2019; Published: 30 August 2019





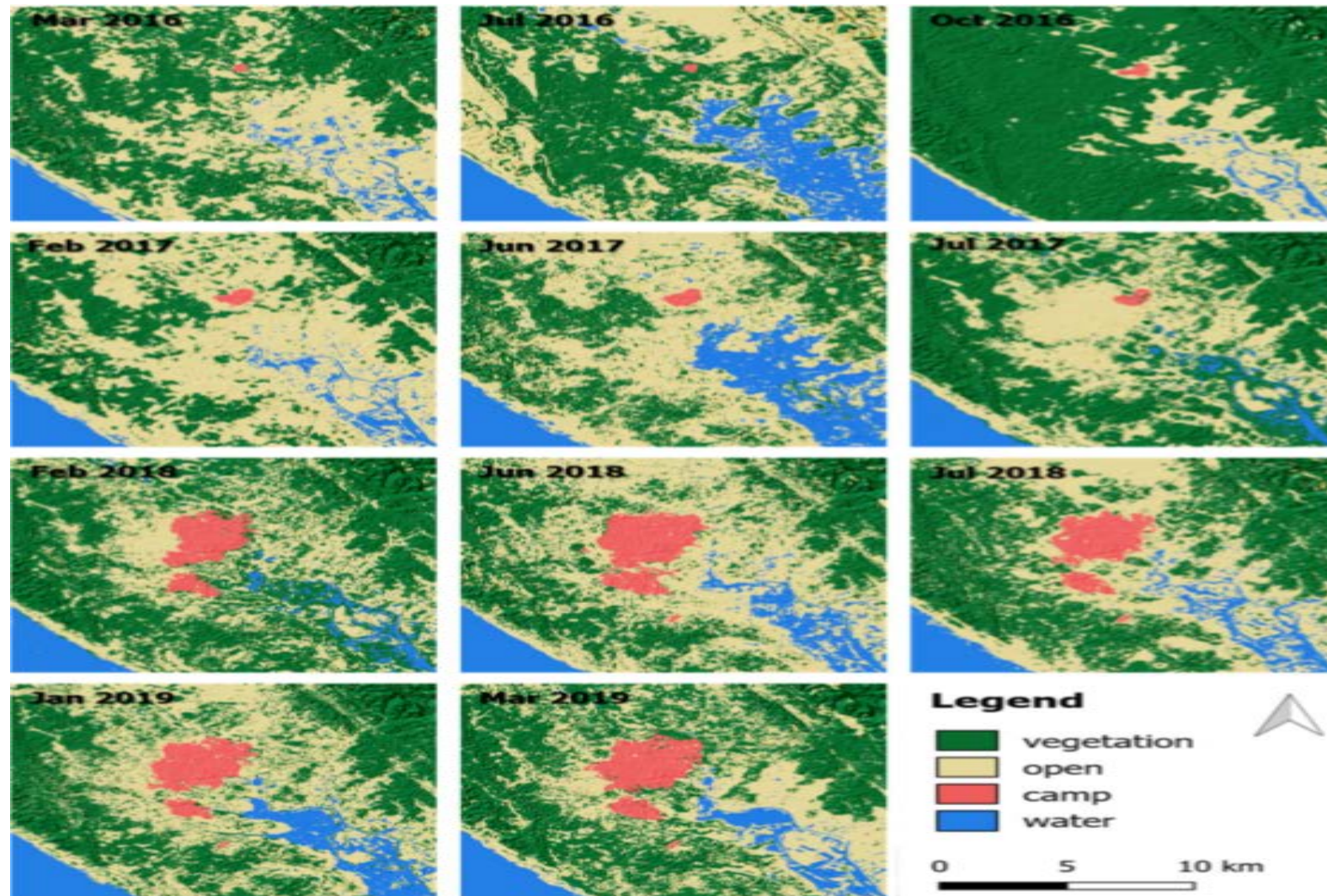


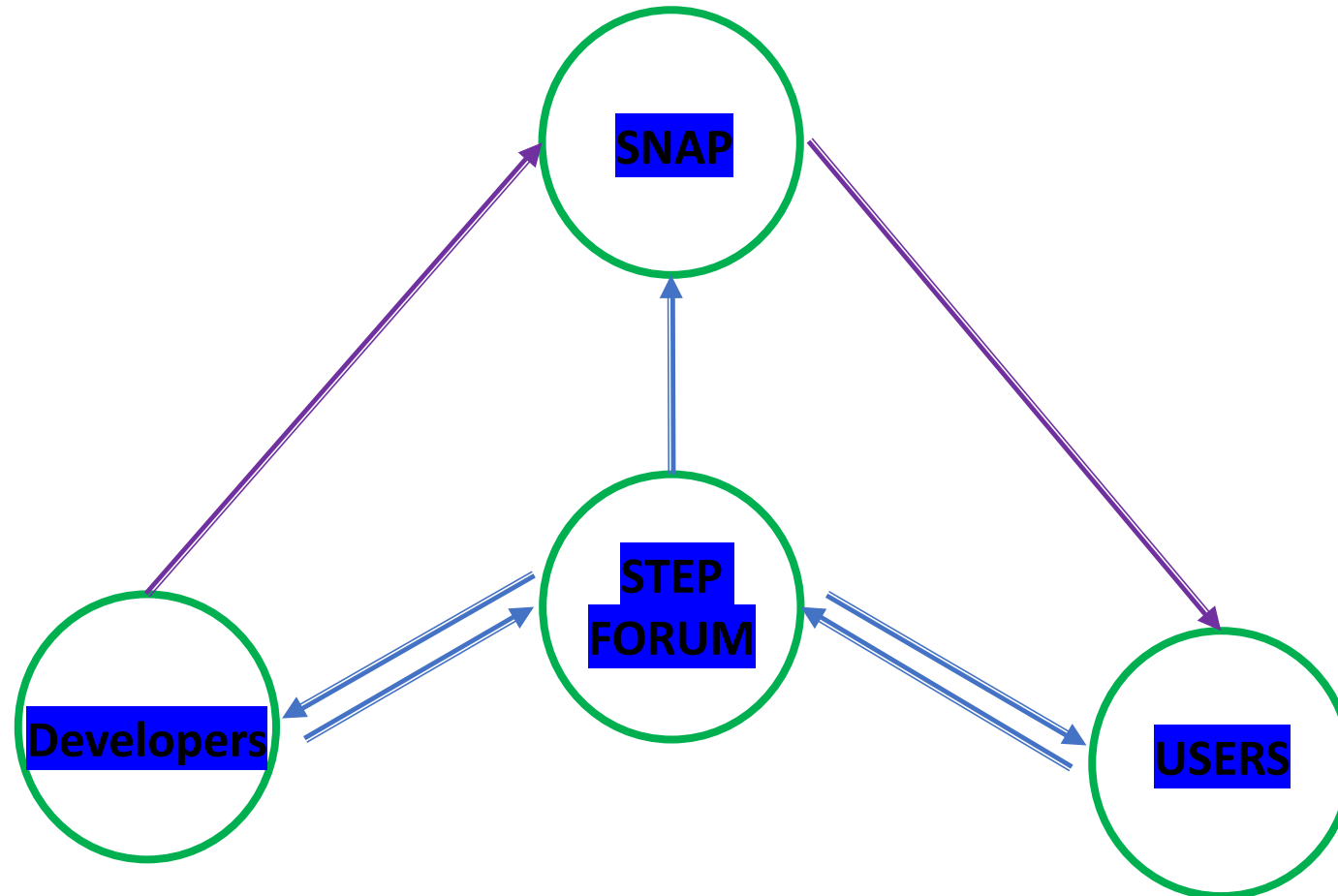
Fig. Land cover classification of the study area between March 2016 and March 2019.

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- STEP FORUM



• STEP FORUM

What makes SNAP special S/W? Good team and supporters behind through the STEP FORUM to reach each individual user.

To make this S. F. more distinct and exceptional of the other similar forums, some step could be done,

1- Add up some instructions to all new commers, should be available always in our S.F. page,

A- Before posting a new topic please use the search function,

B- Copy and paste the error you got in the search function to be sure that this error is not discussed before in order to create a new topic,

C- If your question is already available and it's posted before please use this function to raise it again (in this case a new function should be added up to this purpose!)

D- Use the links available to take a look at the tutorials videos and pdf available (Add the links of the videos and pdf have been created before, as well as the RUS tutorials,,,))

2- Create an archive for all old errors and discussions , are invalid anymore with new SNAP version and use.



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Thanks a lot for your attending and attention

