Processed land SAR data

**Project number**

**313238**

**Project title**

**LOTUS- Preparing Land and Ocean Take Up from Sentinel-3**

**Call (Part) identifier**

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Deliverable Number 4.2

Title: “Processed land SAR data”

Nature: Product

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DOCUMENT CHANGE LOG | | | | |
| Product | Release | Date | Comments | Changed by |
| RL\_2\_LAN | 1.0 | 21-08-2014 | Temporary product | Karina Nielsen |
| SM\_2\_LAN | 1.0 |  |  |  |
| SW\_2\_LAN | 1.0 |  |  |  |

# Data description

This document describes the processed land SAR data including the data products:

* RL\_2\_LAN River and lake levels
* SM\_2\_LAN Soil moisture
* SW\_2\_LAN Snow depth

The document change log (located in the beginning of this document) contains information regarding the data release. The individual data products are described in section 1.2-1.4.

## Data release comments

Current data release is 1.0! It must be emphasized that this is a temporary release. The products are still being tested and validated.

### Changes since last release

N. A.

## RL\_2\_LAN River and lake water levels

This data product contains 20 Hz river and lake levels relative to the reference ellipsoid WGS84. This product also contains an along track mean value for each inland water crossing, which can be used directly to generate time series. Data has been processed according to the algorithm, which is described in deliverable D2.3.

### Description of individual columns

The individual columns in product RL\_2\_LAN are explained in Table 1. Columns in black, represents columns that are planned to be in the final product, while column in gray are temporary column that only will be available in the testing and validation phase.

* The 20 Hz water levels are available in column 20.
* The along track mean value per crossing is available in column 22.

Table 1: Description of data product RL\_2\_LAN column wise.

|  |  |  |  |
| --- | --- | --- | --- |
| **Description of data product RL\_2\_LAN** | | | |
| Column | Description | | Units |
| 1 | Year | | Year |
| 2 | Day of year | | Days |
| 3 | Second of day | | Sec. |
| 4 | Latitude | | Deg. |
| 5 | Longitude | | Deg. |
| 6 | Surface height (WGS84) obtained from threshold retracker | | m |
| 7 | Surface height (WGS84) obtained from primary peak threshold retracker | | m |
| 8 | Surface height (WGS84) obtained from simple threshold retracker | | m |
| 9-18 | Surface heights (WGS84) of up to ten peaks; 99999 indicates no value | | m |
| 19 | Mod44W value; 1=water, 0=land | | NA |
| 20 | Surface height (WGS84) based on MPT retracker. When coulumn 21=99999 the PPT retracker is used | | m |
| 21 | Quality flag |  |  |
|  | 1 | abs(peak surface height-robust mean)<=0.5 m | NA |
|  | -1 | abs(peak surface height-robust mean)>0.5 m | NA |
|  | 99999 | Land points or water body with less than 5 points | NA |
| 22 | Along-track robust mean value of inland water body (WGS84). 99999 indicates a land points or water body with less than 5 points. | | m |
| 23 | Standard deviation of along-track robust mean value (column 22) | | m |

### Test data sets

Table 2 describes the defined test areas for river and lakes. Data has been processed for the entire regions. To extract areas defined as water by the land-water mask MODW44, then use column 19=1. It must be noticed that this mask will contain errors!

Table 2: Information regarding test areas for rivers and lakes.

|  |  |  |
| --- | --- | --- |
| **Geographical name** | **Geographical coverage** | **Temporal covarage** |
| Denmark | 8E-13E ; 54.5N-58N | July 2010 – July 2014 |
| Thailand/ Chao Phraya river | 99E-102E ; 13.25N-17N | July 2010-July 2014 |
| Amazon river | 47W-61W ;5S-3N | Oct. 2012- July 2014 |
| Brahmaputra river | 89.5E-91.5E ; 21.75N-24.25N | Oct. 2012 - July 2014 |

## SM\_2\_LAN Soil moisture

### Description of individual columns

### Test data sets

## SW\_2\_LAN Snow depth

### Description of individual columns

### Test data sets

# Download data

Data is available on the Lotus project webpage under the following link <http://www.fp7-lotus.eu/Publications/Prototype-data>