Acknowledgements

The TerraPNG Operator User’s Guide was compiled by Paul Hasagama and reviewed by Oala Idua and Masamichi Haraguchi. This user’s guide is based on TerraAmazon version 4.5.0 which was jointly released by INPE (www.inpe.br) and FUNCATE (www.funcate.org.br) on January 09, 2015.
**Acronyms**

CCDA – Climate Change and Development Authority
DIF – Difference
FUNCATE –
GIS – Geographical Information System
INPE – Brazilian National Institute for Space Research
PNG – Papua New Guinea
PNGFA – Papua New Guinea Forest Authority
PRODES –
REDD+ – Reducing Emissions from deforestation and forest degradation in developing countries including forest conservation, sustainable management of forest and enhancement of forest carbon stocks
Welcome to TerraPNG

TerraPNG is Papua New Guinea’s customised version of TerraAmazon which is an open source GIS tool developed by INPE for the purpose of monitoring Brazilian Amazon Forest. TerraPNG is designed to be a multi-user editor of geographic vectorial data stored in a TerraLib model database. It engages land use and land cover classification tools as well as spatial operations between vector data, allowing transitions analysis among other applications. TerraPNG keeps working time records for project control. Its functionalities are extensible through plugins, such as the already existing TerraImage (PDI) and TerraPrint (plotting).

The source platform TerraAmazon was first developed by INPE and FUNCATE in early 2005. PNG experts from both CCDA and PNGFA were sent to INPE for trainings on how to use the system in 2012 and 2014. The system was modified for PNG and called TerraPNG. In 2015 a first land use and land cover assessment was conducted by CCDA using TerraPNG and the results were made available to the public in 2016 through the PNG REDD+ and Forest Monitoring Web-portal.

TerraPNG’s is constantly being updated by the developer (INPE) and having tools and system enhancements, pursuing national and international approval.

PNG adopted the system because it wants to fulfil its commitment under REDD+ to Reducing Emissions from Deforestation and Forest Degradation by monitoring Activity Data on land use and forest change using wall-to-wall mapping.

TerraPNG is free and available for download at source website: www.terraamazon.org.
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1 INTRODUCTION TO TERRA-PNG

TerraPNG is a GIS tool designed to be a multi-user editor of geographic vectorial data. It was developed to improve the corporate production of geographic data in order to provide an accurate measurement of deforestation, forest degradation, land use and land cover change and similar applications.

In TerraPNG, several users can work simultaneously on the same data following a methodology fixed by Administrator User(s). This reduces the time of project execution and ensures that the final data is entirely produced under the same methodology.

The spatial operations between vector data allow transitions analysis among other applications.

The system has a built-in structure to allow experienced users to audit the data produced. It also provides reports so Project Managers can follow and analyse the evolution of the work.

The data is stored in a TerraLib model database (www.terralib.org) and is worked within a client server environment.

Access Control and Users

TerraPNG has two user levels: Administrator and Operator. The Administrator User has full access to all the menus and spatial operations, while the Operator User does not.

Cell Layer

Vector layer with a different type of representation: cell. TerraPNG requires the existence of a cell layer for the Vectorial Edition through Project and for most of the spatial operations available.

The cell layer cuts classified data in tiles, as shown in the next figure. This means that when classifying a polygon covered by more than one cell, the polygon will be cut according to the limit of each cell.
Class
Classes are the attributes that will be applied to polygons through the classification process. They can be land cover, land use, soil typology, vegetation, climate, etc.

Classification Process
Group of procedures needed to create polygons and apply them attributes through the use of the classification tools within the edition through projects.

Database
A TerraPNG database encloses the whole set of data, either raster or vector data.

Edition Layer (or Input Layer)
Layer pointed by the theme active when opening the edition mode. Works as a draft in the classification process of the vectorial edition through projects and is edited directly in the direct vectorial edition. Once the user has opened the edition mode, every geometry created in it is instantly stored in this layer. Any vector layer containing polygons representation can be used as an input layer to the classification process until it is associated to rules or intentionally blocked by an Administrator user for data security matters.

Edition Mode
The Edition Mode enables vectorial editions. It is opened by clicking on the icon having an Edition Layer active. The Main Interface changes to display the Drawing and Classification Tools. If there is an active project, the Classification tools become functional and the classification process is executed when triggered by one of the following tools: or . The result of the classification process is stored in the Output Layer.

If there is no active project, only the Edition Layer can be edited through direct edition and its attributes must be applied to each polygon by typing the values in the attribute pop-up interface. In this case, the classification tools are not functional and nothing happens if they are triggered.

Interest Area (or Area of Interest)
A spatial delimitation of a geographic area. When assigned to a project, vectorial edition can be performed only within such area.

Layer
Vector or raster data. Every vector or raster data stored in the database is presented to the user as a layer in the Layers Tree (see the main interface on page 7).

Vector data can have three types of representation: polygons, lines or points. Layers are visible to all users.
Output Layer

In TerraPNG interfaces you can find two different uses for the output layer term.

- Vector or raster processed and saved by the TerraPNG operation, for example, creating a buffer.
- Destination layer for the resulting output of the classification process in a project. Different classes can have different output layers. Output layers cannot be used to access the edition mode.

Phase

A phase is a stage of the vectorial edition in a project’s execution. Through the concept of phase, TerraPNG can keep logs of the time spent in each stage, enhancing project management. A typical set of phases is to have a data production phase and a data verification phase.

Project

A project identifies the set of rules that will be active in the classification process, as well as the classes involved. Besides the procedures involved in or supporting the vectorial edition through projects, no other procedure in TerraPNG requires the existence of a project.

Scenario

A scenario is composed by an area of interest and an observation date assigned to it. As an example, if a certain satellite grid is used as an area of interest, then the observation date of the image to be used must be assigned to the area of interest.

A Scenario does not attach an image to an area of interest, but an observation date.

Theme

A theme is a structure that defines which data from one particular layer will be visualized and how it will be displayed on the screen. Themes are user-related, that is, if a user creates a certain theme, he will be the only one able to see it, change it or remove it.

No user can see other user’s themes, not even having administrator privileges.

View

A view is a structure that defines the data that will be visualized and manipulated simultaneously. That is, if the user needs to visualize a satellite image and a vectorial data at the same time, both these data must be added to the same view. Views are user-related, that is, if a user creates a certain view, he will be the only one able to see it, change it or remove it.

No user can see other user’s views, nor have administrator privileges.
2 TERRAPNG INTERFACE
The following figure presents the main interface. It has three main areas:

- Database & Layers Tree
- Views & Themes Tree
- Drawing Area.

The toolbar is located on the top of TerraPNG interface. It presents shortcuts to several functions, which are described below.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td><strong>Database</strong>: Creates or connects to a local or remote database</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add View</strong>: Defines the view of the user. The View will receive the characteristics of the reference system of the first inserted data</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add Project View</strong>: Automatically adds a view that contains as themes all the layers involved in the project “Rules”</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add Theme</strong>: Defines the visual or graphical presentation of a layer and its spatial components</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add Multiple Theme</strong>: Adds multiple layers into a single View</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add External Theme</strong>: Enables remote access to different databases, allowing spatial data to be imported</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Vector Grouping</strong>: Customizes the visual or graphical presentation of an attribute of interest</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Add WMS Theme</strong>: Allows connecting to a WebMapService to visualize data</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Create Google Theme</strong>: Visualize Google Maps API on a Theme</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Enable Project</strong>: Activates the set of rules for an existing project</td>
</tr>
<tr>
<td>![Icon]</td>
<td><strong>Process Control</strong>: Sets and starts the analysing process for a given area</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Scene Reviser</td>
<td>Displays information on images to be reviewed</td>
</tr>
<tr>
<td>Database Tree</td>
<td>Activates or deactivates the database Tree</td>
</tr>
<tr>
<td>Views Tree</td>
<td>Activates or deactivates the Views/Themes Tree</td>
</tr>
<tr>
<td>Display</td>
<td>Activates or deactivates the working/draw area</td>
</tr>
<tr>
<td>Enable Full Screen</td>
<td>Enables Full Screen</td>
</tr>
<tr>
<td>TerraPrint</td>
<td>Initializes the TerraPrint plugin, used to create maps,</td>
</tr>
<tr>
<td></td>
<td>cartograms, charts and others</td>
</tr>
<tr>
<td>Cloud Detection</td>
<td>initiates Cloud Detection Plug-in.</td>
</tr>
<tr>
<td>PDI</td>
<td>Initializes the DIP plugin, used for digital image processing</td>
</tr>
</tbody>
</table>
3 DATABASE CREATION

TerraPNG relies on database management system to store all the produced or imported data. Therefore, the creation or connection to an existing database is a requisite.

To create the database, it is necessary to install postgresQL (or other DBMS) on your machine or server.

After the PostgreSQL and TerraPNG installation, **click on the database button** of the toolbar to create the database.

**Operation**
- Click – **Create**
- Database Type – **PostgreSQL**
- Host – **localhost** (or leave it blank)
- Port – **5432** (or leave it blank)
- User – **postgres**
- Password – **postgres**
- Database Name – **TerraPNG_Assessment**
- Encoding – **Click – Get List – UTF8**
- **Click OK**

**CONNECTING TO A DATABASE**

To connect to an existing database, close the current active database

**File » Close Database**
- Click – **Yes**

Afterwards, proceed as below:
Toolbar » Database

Operation
Click – Connect
Database Type – PostgreSQL
Host – localhost (or leave it blank)
User – postgres (or leave it blank)
Password – postgres
Click – Select Database
Select TerraPNG_Assessment
Click OK

Note: To connect into a remote database, introduce the server IP Address on the HOST field. The username and password must be the same one as set by administrator.
4 CREATING THE CONCEPTUAL MODEL

The Conceptual Model structures TerraPNG edit environment. It is the central component that allows the definition of users and its functions, projects, activities, topological rules and spatial boundaries.

To create the Conceptual Model, follow these instructions:

Administration » **Create Conceptual Model**

![](image)

**Note:** *Since this operation changes the internal structure of the database, it will be necessary to confirm the operation.*

**Click – Yes**

![](image)

In the next window you must define the name, map projection and spatial boundaries of the workspace. The created layer will consist in a regular grid, which will define the areas to be selected by the users.

Set the next window as follows:

**Cell layer**
- **Name** – **TERRAPNG_CELL**
- **Click** – **Projection**
- **Projection** – **LatLong**
- **Datum** – **WGS 84**
- **Parameters**
  - **Unit** – **DecimalDegrees (*)&**
- **Click** – **OK**

After returning to the conceptual model configuration window, set the coordinates of the lower left and upper right corners.
For this assessment set as follows:

Box Information
LL (x). 140.86
UR (x). 155.97
LL (y). -11.64
UR (y). -1.36
Resolution. 0.25

**Click OK**

**NOTE:** the Resolution uses the same unit as the selected projection and defines the Conceptual Model cell size:

**Click OK**
To visualize the CELL layer created:

In the Toolbar, click:

**Add View**

View Name – **TPNG_CM**

Click – **OK**

To create the Theme, select the created view on the Views/Themes tree and the CELL layer on the database tree.

In the Toolbar, click:

**Add Theme**

Click – **OK**
To visualize the CELL layer, click on Draw . If you want to check the layer information, click on the Information cursor and then click on any cell.
5 DEFINING ACCESS CONTROL

In this step the users **user_int** and **user_aud** of the project are created and their access to the project is defined.

Project Management » Access Control

![TPNG CM Interface](image)

**NOTICE:** Note that in the User List, there is a user called postgres already. After the creation of the Conceptual Model, the postgres user is automatically created. This user has administrator privileges and carries the same user name used during the creation of the database.

Follow the steps below to include additional users:

**User tab**

- User controller
  - Click **Add New User**
  - Name – **user_int**
  - Password – **123**
  - **Click Add**

Repeat the previous procedure to create the auditor user:

**User tab**

- User controller
  - Click **Add New User**
  - Name – **user_aud**
  - Password – **1234**
To remove a user:

User tab
  User list
  Click – **user_int** *(User)*
  Click – **Remove**
  Click – **Yes**

**NOTICE:** *If the user has executed any edition, the system will not allow it to be deleted*

To change the password:

User Tab
  User list
  Click – **user_int**
  Click – **Password**

Next window:

New Password – **123456**
Confirm Password – **123456**

**Click – OK**
After setting the Access Control, it is necessary to create the groups. Note that in the group tab, there two groups already. The admGroup group and the projectManagerGroup are automatically created during the creation of the conceptual model and holds Administrator and Project Manager privileges respectively.

Follow the steps below to add other groups:

**NOTICE:** The group defined with operation functions only will not have access to management and administration tools, such as:

- Rename Layer
- Change Projection
- Delete Objects from Layer
- Delete Layer
- Attribute Table Maintenance

To remove the group, follow the steps below:

**NOTICE:** If the User is associated with a group, the system will not allow its removal.

Create also an **Auditor** group with Operator Functions.

Now, the user needs to be associated to the group. Follow the steps below to associate them:

**OPTION:**
NOTICE: A user can be associated with more than one group.

Click OK

NOTICE: The association of users with groups is important to allow or not the execution of certain tasks by a group based on its group privileges.
6 PHASE CONTROL

In Terra PNG, a phase is a stage in the execution of a project. A stage will be associated to a group and/or a task. To create a phase, click on:

Project Management » Phase Control

![Phase Control Menu]

To create a phase:

New Phase
Name – **INTERPRETATION**
Click – **Add**
Click – **OK success message**

![Phase Control Window]

Phase X Group
Group – **Interpreter**
Click – **Associate**
Click – **OK success message**
Click Close

Repeat the procedure above for the Auditor group.

To remove a phase, if necessary:
Phase List
Click – **AUDITING**
Click – **Remove**
Click – **OK** success message

Click Close

**NOTICE:** Phases with associated tasks cannot be removed.
7 PROJECT MANAGEMENT

A project identifies a set of active rules in the edition process. It is possible to have more than one project in a single database, but only one of them can be active.

To define the project, proceed as follows:

Project Management » Classification Control » Project Management

In the Project Management window:

- **Project Name** – **PNG_PRODES**
- **Number of locked cells** – **10**
- **Click** – **Add**
- **Click** – **OK** (*success message*)

**Click Close**

**NOTICE:** To remove a Project, select the Project and click on the Remove button. If the Project contains associated rules, the system will not allow removal.
To activate a Project, click on **Activate Project** button, select the project and click on **Activate**.
8 CREATING LAYERS

TerraPNG allows users to create new layers using several methods.

Layer » Create Layer

To create a new layer, proceed as follows:

Creation Mode
- Click – New One
- Click – Next

Layer Identification tab
- Name – FOREST
- Author – OCCD
Extents tab
Projection information
Click – Projection

In the projection window, proceed as follows:

Projection
Click – LatLong

Datum
Click – WGS84

Hemisphere
Click – South
Click OK

After returning to the configuration layer window:

Box Information
Click – Use an Existing layer box
Select – TERRAPNG_CELL
Repeat this procedure to create layers DEFORESTATION, SECONDARY FOREST, GRASSLAND, CROPLAND, SETTLEMENT, OTHER LAND and HYDROGRAPHY.

DELETING LAYERS

This tool is used to remove one or more layers from the current database.

Administration » Delete Layers

In the interface:

Click Search
In the data Layer Search window

List of Layers
   Click – TRIAL

Click OK

![Layer Search window]

After returning to the **Delete Layers** window, the selected files will be displayed in the **List of Layers**:

Click – **Delete Layers**
Click – **OK (Information window)**
Click – **Cancel**

![Delete Layers window]

**NOTICE:** *Remove* and *Remove All* buttons are only selection tools to remove the selected layers from the **List of Layers to Delete**.
9 IMPORTING VECTOR DATA

Vector data can be imported from other databases or from external files. However, only the area contained within the limits of the Conceptual Model can be edited.

File » Import Data

In the import interface, set the parameters as follows:

Import Parameters
- File – C:\TerraPNG_Data\Province\png2000_prov_region_region.shp
- Click – Projection
- Click – OK

**NOTICE:** At the end of the process, the software will ask whether or not the user wants to display the new vector in another View.

Click No
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![Display Data dialog box](image)

The layer 'png2000_prov_region_region' was created successfully.
Do you want to display the data?

[Yes] [No]
10 RULE MANAGEMENT

A rule is defined by a spatial operation. The spatial operations that can be related to a rule are: difference, intersection, union and clean.

For example, assume Layers A & B as input & S as output.

**Difference:** $S = A - B$; $S$ will store all polygons or all parts of polygons in A that do not overlap with polygons in B.

![Difference Diagram]

**Intersection:** $S = A \cap B$ results in the region of coincidence between layers A & B.

![Intersection Diagram]

**Clean:** this function removes the area of the layer $S$ which coincides with the area of the layer A

![Clean Diagram]

Project Management » Classification Control » Rule Management

Two spatial operations (DIFFERENCE AND CLEAN) will be used in this TerraPNG land cover assessment.

For the creation of rules, set the parameters as follows:

**Rule Params**
- Rule Name – **DIF_DEFORESTATION**
- Operation – **Difference**
Layer Name – **DEFORESTATION**
Click – **ADD** (in Cell Column)

**Cell Column Name**
Type – **cell_oid**
Click – **OK**
Click – **OK**
Select – **cell_oid** (in Cell Column)
Click – **Add**

**NOTICE:** Repeat the procedure for the creation of the Difference and Clean rules for all layers.

**Rule Params**
- Rule Name – **CLEAN_DEFORESTATION**
- Operation – **Clean**
- Layer Name – **DEFORESTATION**
- Select – **cell_oid** (in Cell Column)
- Click – **Add**
Click Close

**NOTICE:** The creation of the `cell_oid` column is only necessary when this field does not exist in the layer’s attribute table.

To remove a rule, select it and **click Remove**. After removal, a message will be displayed with the status of the operation.

**Click OK.**

**NOTICE:** The rules cannot be changed or deleted after its association to a project.
11 CLASSES MANAGEMENT

Classes in TerraPNG are defined for the whole database and can be associated to any project.

Project Management » Classification Control » Class Management

To create a class, follow the steps below:

Class tab

Class

Name – DEFORESTATION
Click – Add
Click – OK (Information window)

Click Close

Repeat the procedure for the other classes (forest, secondary forest, grassland, cropland, settlement, hydrography and other land).
12 RULES CONTROL

The rule control defines relations between projects, rules and classes. Therefore, the operations related to the creation of the structure of the project must have been executed previously.

Below are the descriptions of the fields displayed in Rules Control:

1. **Project**: presents the list of projects defined in the database.

2. **Set of rules**: area where rules and output layer will be associated.

3. **Select Output Layer**: selects the layer to be used as Output.

4. **Output Layer List**: lists the layers selected as Outputs.

*Note each output layer **MUST** be validated separately

5. **Rules**: use this tab to associate a spatial rule with a specific Output.

6. **Attributes**: this tab associates the layer attributes with the rules included in Rules tab (previous tab).

7. **Class List**: presents all classes defined in the database and allows their association with an output. It demands the creation of an attribute column to record classes.

8. **Clean**: presents the clean rules defined in the database, allowing its association with an Output.

9. **Validate**: This option validates all the information created for the project, such as rules, associations, classes, destination layers, representations of polygons. To make use of the entire structure created, it is necessary to click on the validate button for each output of the Output Layer List.

Project Management » Classification Control » Rules Control

To control the edition rules, follow the steps below:

Project – **PNG_PRODES**

Select Output Layer
   Click – **Manager Layers**
      Click – **Layer**
      Select – **DEFORESTATION**
Click – **Ok**

Click – **ADD** (if cell_oid does not appear in the drop-down menu)

Type – **cell_oid**

Click – **OK**

Click – **OK**

Click – **Add**

Click – **OK**

Select Output Layer

Click –  (To associate the layer with the project in Output Layer List)

Rules tab

All Rules

Click –
Output Layer List
Click – **DEFORESTATION**

Class Columns tab
Column
Click – **Add column**

In the window create new class column:

- **Type** – **class name**
- **Click** – **OK**
- **Click** – **OK** *(information window)*

After returning to the previous window:

Class List tab

Click – **DEFORESTATION**

Click –
Repeat the procedure for the other layers.

Output Layer List
Click – **DEFORESTATION**

Clean tab
All Rules
Click – **CLEAN_DEFORESTATION**
Click –

Repeat the procedure for the other layers.

Click – **Validate** (the validation must be done for each layer separately)
Click – **OK** (Indexes information window)
Click – **OK** (Information window)

Click – **Close**
13 DEFINING AN AREA OF INTEREST

An Area of Interest (AI) defines the spatial boundaries of a geographic region. The AI layer ensures that all input geometry will be contained within it; therefore, any information outside the AI will be discarded during the classification process.

Project Management » Interest Area

Import the boundaries contained in a vector file as follows:

Layer
Click – Add
Select – **png2000_prov_region_region**
Click – Ok
Click – Add
Select – **CENTRAL** (should choose your own area/province of interest)
Parameters

Type – 09/12/2015 (put your current date)
Click – Add
Click – OK

Click – Next

**NOTICE:** A scenario consists of an Area of Interest and a date of observation.

The next window shows all scenarios included in the database,

Click – Next
To change the date of a scenario, select the scenario and click on the **Update** button. Change the date and click on **Update** to confirm the modification.

*In the Project association:*

Project
- Click – **PNG_PRODES**
- Click – **Set**
- Click – **Finish**
You can lock a scenario for the selected project to prevent other users from accessing it. Select a scenario to lock and click on Locked.

**NOTICE:** After defining the DB environment, the images that will be interpreted will be imported.
14 RASTER COMPOSITION

Click PDI Plugin

Image Processing » Functions » Raster Composition

**Notice:** The order of the imported images indicates the sequence for the colour composition. The first will be applied to the red channel, the second to the green channel and the third to the blue channel.

Input Parameters

From File tab
Click – File – C:\ TerraPNG_Data\ AGP\ S10E148_2014_L8
– S10E148_2014_L8_Band_6
– S10E148_2014_L8_Band_5
– S10E148_2014_L8_Band_4

Geographical Parameters
Projection – LatLong/WGS84

Storage Parameters
Layer Name – S10E148_2014_L8_654
Compression – ZLIB
Dummy – 0
Levels – 5

Click – OK
Click – **No**
IMPORT RASTER

Return to the main interface of TerraAmazon.

File » Import Raster

Data Characteristics

Click – File
C:\ TerraPNG_Data\First_Analysis_Export\ S10E148_2014_L8_654
Dummy – 0

Click – Next
Geographical Parameters
Projection – **LatLong/WGS84**

Click – **Next**

Storage Characteristics
Layer
Compression – **ZLIB**

Tiling
Dummy – 0

Import Options
Click – **Change Edge Dummy Value – 0**
Click – **Next**

Multi Resolution Characteristics
   Number of Levels – **5**
   Multi Resolution Method – **Lower Resolution**

Click – **Finish**

Click – **No**
15 CREATING VIEWS AND THEMES

Create a View for the image to be classified.

Toolbar » Add View
– Interpretation

To create a Theme, select the View Interpretation created in the area of Views/Themes and select the layer S10E148_2014_L8_654 in the database area.

In the toolbar
  Click – Add Theme
  Unselect – Set Scale (if selected)
  Click – OK
16 SEGMENTATION

The segmentation is the process of partitioning a digital image into multiple segments (sets of pixels). The goal of segmentation is to simplify and/or change the representation of an image into something that is more meaningful and easier to analyse.

Click PDI Plugin

Image Processing » Segmentation

Set the segmentation window as follows:

Input Parameters
- Raster Image – **S10E148_2014_L8_654**
- Type – **Baatz**

Configuration Parameters
- Scale – **20**
- Compactness – **0.5**
- Colour – **0.5**

Output Parameters
- Layer Name – **S10E148_2014_L8_654_seg**

Click OK
NOTE: The segmentation process requires large quantities of memory.

Click – No

To visualize the outcome of the segmentation:

Close the PDI plug-in.
Add the Segmented layer in the Interpretation view
Draw the Theme
17 ADDING TASKS AND ACTIVATE PROCESS

A task defines the interest area to be edited as well as the user responsible for it.

Toolbar » PROCESS CONTROL

Click – Add New Task

Phase

Select – INTERPRETATION

Click – List
Click – 1
Click – Add
Click – **OK**

Click – **Close**

Click – **1**
Click – **Start Process**
Click – **Close**
18 MANUAL EDITION

To start the manual edition, add the segmented layer to the Interpretation view which contains the layer (S10E148_2014_L8_654) to be edited.

Select the Segmented layer and enable the edition mode.

VIEW BAR » ENABLE LAYER EDITION

NOTE: By clicking on the Enable Layer Edition tool, the Application, Configuration and Editing Toolbars are automatically enabled.

APPLICATION TOOLBAR

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Save" /></td>
<td>Save: Saves the modifications to the layer</td>
</tr>
<tr>
<td><img src="image" alt="Cancel All Edition" /></td>
<td>Cancel All Edition: Removes all unfinished edition</td>
</tr>
<tr>
<td><img src="image" alt="Undo" /></td>
<td>Undo: Removes the last added node</td>
</tr>
<tr>
<td><img src="image" alt="Redo" /></td>
<td>Redo: Inserts the last removed node</td>
</tr>
</tbody>
</table>

CONFIGURATION TOOLBAR

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><img src="image" alt="Digitalization Step – mm" /></td>
<td>Digitalization Step – mm: Sets the minimum interval between the vertex on the continuous vector mode</td>
</tr>
<tr>
<td><img src="image" alt="Turns Snap On" /></td>
<td>Turns Snap On: Enables snapping the cursor to the nearest existing node.</td>
</tr>
<tr>
<td><img src="image" alt="View Cells" /></td>
<td>View Cells: Enables visualizing cells in use by other users</td>
</tr>
<tr>
<td><img src="image" alt="Classes of the Project" /></td>
<td>Classes of the Project: Determines the output class of an edited or reclassified polygon.</td>
</tr>
</tbody>
</table>

EDITING TOOLBAR
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Geometries</td>
<td>Selects individual geometries created on the edition layer</td>
</tr>
<tr>
<td>Select by Drawing Area</td>
<td>Selects geometries based on the drawing area</td>
</tr>
<tr>
<td>Select Cell</td>
<td>Selects for edition individual cells from the conceptual model</td>
</tr>
<tr>
<td>Select Cells in Box</td>
<td>Automatically chooses the cells to be edited based on the project configuration</td>
</tr>
<tr>
<td>Unselect All Cells</td>
<td>Deselects all cells</td>
</tr>
<tr>
<td>Create Polygon</td>
<td>Creates a polygon based on vertex–by–vertex mode</td>
</tr>
<tr>
<td>Continuous Polygon</td>
<td>Creates a polygon based on streaming mode</td>
</tr>
<tr>
<td>Move</td>
<td>Moves selected geometries</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes selected geometries</td>
</tr>
<tr>
<td>Clear Current Class</td>
<td>Clears only the chosen classification for a set of selected polygons</td>
</tr>
<tr>
<td>Clear Classification</td>
<td>Removes all classifications from a set of selected polygons</td>
</tr>
<tr>
<td>Select Multi Layer</td>
<td>Selects individual geometries created on the classification layer</td>
</tr>
<tr>
<td>Select Area Multi Layer</td>
<td>Selects classified geometries, based on the drawing area</td>
</tr>
<tr>
<td>Classify</td>
<td>Classifies the selected geometries</td>
</tr>
<tr>
<td>Reclassify</td>
<td>Modifies polygon classifications</td>
</tr>
<tr>
<td>Draw Reference Rect</td>
<td>Exhibits a 6.25ha square to be used as reference.</td>
</tr>
<tr>
<td>Insert Vertex</td>
<td>Add vertices to a polygon under edition</td>
</tr>
<tr>
<td>Move Vertex</td>
<td>Move vertices of a polygon under edition</td>
</tr>
<tr>
<td>Delete Vertex</td>
<td>Delete vertices of a polygon under edition</td>
</tr>
<tr>
<td>Aggregate Area</td>
<td>Aggregate area to a polygon under edition</td>
</tr>
<tr>
<td>Remove Area</td>
<td>Removes polygons areas</td>
</tr>
<tr>
<td>Unite Polygons</td>
<td>Unite polygons</td>
</tr>
</tbody>
</table>
Click on the cells of interest.

By clicking again on the tool, the cells will appear as shown below:
NOTE: Due to TerraPNG multi-user environment, layers are only enabled for edition after cells are selected. For an active user, cells will appear in green. Cells selected by others will be shown in red and cannot be selected.

To edit the segmented layer, proceed as follows:

EDITING TOOLBAR » Select geometries

Zoom into a segment and click on it to select it. You can now classify the segment.

To classify the feature choose the class and click Classify.
Repeat the procedure for the remaining classes until the whole image is classified.
(TerraPNG Initial Landuse Assessment 2015)

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