

## INTRODUCTION

This is the documentation for an alpha release version (05 November 2020) of the Map Editor for Open X-Com Extended (OXCE). The alpha release versions are intended for demonstration and testing of the basic functionality of an in-game map editor. Feedback on the user interface and functionality are appreciated as are bug reports, but bug fixing support will likely be slow and tied to new feature releases. Please read through the following list of included and planned features before making suggestions for further development. It is also not intended to replace MapView but rather to provide supplementary map editing with minimal setup outside installation of OXCE. The primary features in this release are

- Editing of maps included in the currently loaded set of mods
- Creating new maps from the terrains defined in the currently loaded set of mods
- Editing single tiles at a time by adding, changing, or removing objects within the tile
- Editing single AI nodes at a time by adding, moving, changing, and removing them and their links
- Switching between tile and AI node editing modes
- Undoing and redoing single tile/node edits
- Saving edited .MAP and .RMP files in the current OXCE user folder
- Sample ruleset for implementation of the edited .MAP and .RMP files in the openxcom.log file
- Opening the main Map Editor Menu for creating/selecting a new map to edit directly from the Editor Interface.
- Editing multiple tiles/nodes at a time by both rectangular selection and paintbrush-style selection tools
- Copying, cutting, and pasting selections of multiple tiles/nodes at once

The following features are planned for future releases:

- Option to attempt to match MCDs across maps when pasting tiles
- Creating new maps with custom terrains from a selection of terrain data sets (.MCD files) from the currently loaded set of mods
- Direct loading of .MAP files from a specified directory using a supplementary file to indicate which terrain data sets to use
- Find and replace tools for searching and editing tile and node content
- Resizing maps
- Re-ordering and searching of text lists in the Map Editor Menu
- Testing map being edited in the battlescape before saving and importing changes due to tile destruction

## STARTING THE MAP EDITOR

In order to start the map editor, debug mode must be turned on in the configuration file for OXCE. To enable debug mode, locate the file options.cfg for OXCE and open it in a text editor. Change the line that says "debug: false" to "debug: true" and start the Map Editor's OXCE executable. A new item should be visible on the main menu entitled "Map Editor". Clicking this button will bring up the menu for the Map Editor.



Main Menu with debug mode enabled. The Map Editor button is highlighted.

## The Map Editor Menu



1. Terrain filter - displays all map blocks defined for each terrain (under the "terrains:" ruleset) in the currently loaded set of mods in the map/terrain list (see 5). Displays the names of the terrains instead when New Map Mode is enabled. This filter is on by default.
2. Craft filter - displays all the map blocks defined for each player craft (under the "crafts:" ruleset) in the currently loaded set of mods in the map/terrain list (see 5). Displays the names of the battlescapeTerrainData instead for each craft when New Map Mode is enabled. This filter is off by default.
3. UFO filter - displays all the map blocks defined for each UFO (under the "ufos:" ruleset) in the currently loaded set of mods in the map/terrain list (see 5). Displays the names of the battlescapeTerrainData instead for each UFO when New Map Mode is enabled. This filter is off by default.
4. Quick search bar - left-clicking in the bar places focus there. Typing while the quick search bar is focused and a cursor is visible filters the maps list (see 5) to only contain entries that match the contents of the search window. Left-clicking outside the quick search bar or pressing the OK keyboard shortcut (default Enter) releases focus, leaving the typed contents, while pressing the Cancel keyboard shortcut (default Escape) releases focus and clears the contents. Pressing the Quick search keyboard shortcut (default Q) counts as left-clicking inside the bar when it is not focused.
5. Map/Terrain list panel - displays the set of map blocks in the currently loaded set of mods according to which of the filters 1 - 3 was selected and the contents of the quick search bar (see 4). Displays names of the terrains or battlescapeTerrainData for Craft/UFOs when New Map Mode is enabled. Clicking an item here displays more data about the selection in the information panel (see 6) and makes the OK button (see 7) visible.
6. Information panel - displays the name of the selected map block from the map/terrain list (see 5) and the list of .MCD files used by the terrain/battlescapeTerrainData with which the map block is associated. Displays the name of the terrain or the name of the battlescapeTerrainData with its associated craft/UFO internal name when New Map Mode is enabled.

7. OK button - confirms map selection for editing and starts the editor. Brings up the menu to define the size and name of a new map when New Map Mode is enabled. Only visible once a selection in the map/terrain list (see 5) is made. Not visible by default. Pressing the OK keyboard shortcut (default Enter) when visible and the Quick search bar (see 4) is not focused counts as pressing this button.
8. Cancel button - returns to the Main Menu or previous Map Editor instance.
9. Create New Map toggle - Enables New Map Mode. Off by default.



Map Editor Menu when first started with only UFO: Enemy Unknown loaded.

The Map Editor Menu provides access to the Editor itself by gathering the information necessary from the user to start working on a new or existing map. The left panel of the menu (see 5) displays the selections available to the user for editing, whether existing map blocks or map data sets for new maps. The filter buttons above the left panel (see 1 - 3) determine which selections are available in the left panel. The quick search bar (see 4) further filters the contents of the left panel. The right panel (see 6) gives extra information once a selection in the left panel is made. Finally, the buttons at the bottom grant access to starting the editor (see 7), return to the Main Menu (see 8), and switch the Map Editor Menu between current map editing mode and new map mode (see 9).

On bringing up the Map Editor Menu, all of the current map blocks loaded into memory by the active set of mods contained within an entry in the "terrains:" ruleset will be displayed in the left pane of the screen (see 5). The contents of this pane are determined by the filters set above it and whether New Map Mode is enabled. Left-clicking on the Craft filter will switch to displaying all the map blocks used in the "battlescapeTerrainData:" section of the "crafts:" ruleset, while the UFO filter will switch to displaying the map blocks used in "battlescapeTerrainData:" for the "ufos:" ruleset. Clicking the terrain filter will return to the original view. When New Map Mode is enabled by left-clicking to toggle the button in the lower right corner of the screen, the left panel will display the names of the terrains, craft battlescapeTerrainData, or UFO battlescapeTerrainData according to the selected filter. The items displayed in the left panel will match the contents of the quick search bar (see 4) - only names that contain those contents or are part of a terrain that matches when the terrain filter (see 1) is active. When the quick search bar is empty, all available maps or terrains are displayed. Once a selection is made by left clicking on a list item in this left panel, more information will be displayed in the right panel and the OK button will become visible.

The right panel of the Map Editor Menu displays more information about the current selection made in the left panel. While empty when the menu is first started, the name of the selected map block and the map data sets from its associated terrain/battlescapeTerrain data for existing maps or the name of the terrain/battlescapeTerrain data (and internal name of the craft/UFO, if applicable) for new map mode are immediately shown here when a selection is made.



Map Editor Menu with a selection made in the Map/Terrain list panel with New Map Mode off.



Map Editor Menu with a selection made in the Map/Terrain list panel with New Map Mode on.

When left-clicking the OK button when New Map Mode is off, the Map Editor will immediately begin with the selected map. If New Map Mode is enabled, then pressing OK button will bring up the New Map Menu to set the size and name of the new map before starting the Map Editor.

## The New Map Menu



1. Edit map width (x) - changes the width of the new map (size in the x or east/west direction), only allowing increments of 10. Defaults to 10 tiles.
2. Edit map length (y) - changes the length of the new map (size in the y or north/south direction), only allowing increments of 10. Defaults to 10 tiles.
3. Edit map height (z) - changes the height of the new map (size in the z or up/down direction). Defaults to 4 tiles.
4. Edit map name - changes the name of the new map. Defaults to empty text, even when displaying the "Enter Name Here" message that appears when the menu is first shown.
5. OK button - starts the Map Editor with a blank map of the size and name determined by this menu. Pressing the OK keyboard shortcut (default Enter) counts as pressing this button.
6. Cancel button - returns to the Map Editor Menu. Starting the New Map Menu afterwards will revert it to the default values. Pressing the cancel keyboard shortcut (default Escape) counts as pressing this button.

The New Map Menu collects the extra information necessary from the user to start the Map Editor with a blank map block. The text entry boxes for width (see 1), length (see 2), and height (see 3) set the size of the blank map block. The text entry box for the name of the map block (see 4) sets the name of the .MAP file output when the Map Editor saves the map block. The buttons at the bottom of this window either confirm the entered information (see 5) or return to the previous menu (see 6).

To edit one of the values using the text boxes, left-click inside one of them (see 1 - 4). This will bring up a cursor inside the selected box and allow for editing by the keyboard. On pressing confirm/OK keyboard shortcut (default Enter), the entered value will be validated according to the type of edit box selected. The width (see 1) and length (see 2) values will be rounded to the nearest multiple of 10 greater than 0; negative

values and non-numerical characters will not be accepted when editing. The height (see 3) will be forced to a whole number greater than 0. The text entered for the name of the map (see 4) will have any of the characters \/:? "<>| removed from the name before storing the value. If the cancel keyboard shortcut (default Escape) is pressed instead of the confirm shortcut, the value stored before editing was started will be restored. When the text edit cursor is inside one of the text edit fields, clicking on another field will validate the value inside the first text field before moving to the next one. Pressing the next soldier battlescape keyboard shortcut (default Tab) will advance the cursor from one text field to the one below it, wrapping back to the top.

## MAP EDITOR INTERFACE



1. Options menu button - brings up the options menu for the map editor. The options menu can also be accessed by pressing the cancel keyboard shortcut (default Escape) when the tile selection UI (see 17 - 20) is closed.
2. Save map button - saves the current map to a file using the name of the map or brings up the save map as menu if an empty name has been given for a new map. Saving the map can also be done by holding Control and pressing S, with the save map as menu appearing while holding Control and Shift and pressing S. A text message will flash just above the bottom row of buttons (see 1 - indicating whether the saving of the map was successful and whether there are too many nodes to save the RMP file correctly.
3. Load map button - brings up the main Map Editor Menu for selecting a different map to edit or creating a new map. Opening up the Map Editor Menu can also be done by holding Control and pressing O.
4. Undo button - reverts the previous change in the list of changes done to the current map and moves the position in the list of changes back one change. This button will be greyed out and do nothing when the position in the list of changes is at the zeroth position. Holding Control and pressing Z will count as pressing this button.
5. Redo button - enacts the next change in the list of changes done to the current map and moves the position in the list of changes forward one change. This button will be greyed out and do nothing when the position in the list of changes is at the final position. Holding Control and Shift and pressing Z will count as pressing this button.
6. Fill/place button - switches the editing mode for right-clicking on the map to placing objects into tiles. Cannot be active at the same time as the clear/remove button (see 7), and clicking this button will turn off the clear/remove button. Off by default.

7. Clear/remove button - switches the editing mode for right-clicking on the map to clearing tiles or removing objects from tiles. Cannot be active at the same time as the fill/place button (see 6), and clicking this button will turn off the fill/place button. On by default.
8. Cut button - clears the selected tiles and saves their contents to the clipboard. This button will be greyed out and do nothing when no tiles are currently selected. Holding Control and pressing X will count as pressing this button.
9. Copy button - saves the contents of the selected tiles to the clipboard. This button will be greyed out and do nothing when no tiles are currently selected. Holding Control and pressing C will count as pressing this button.
10. Paste button - switches the editing mode for right-clicking on the map to placing the tile contents saved to the clipboard onto the map at the clicked or selected location. How the tile contents are placed can be modified by the selection of editing mode (see 6 and ??) and tile part filter (see 11 - 14). This button will be greyed out and do nothing when the clipboard has nothing saved to it. Holding Control and pressing V will count as performing a right-click at the location of the cursor with paste mode active without toggling this button.
11. Floor filter button - selects the floor part of tiles for editing, turning off all of the other tile part filters (see 12, 13, and 14). Clicking when turned on will turn off the filter. Off by default. Pressing 1 will count as pressing this button.
12. West wall filter button - selects the west wall part of tiles for editing, turning off all of the other tile part filters (see 11, 13, and 14). Clicking when turned on will turn off the filter. Off by default. Pressing 2 will count as pressing this button.
13. North wall filter button - selects the north wall part of tiles for editing, turning off all of the other tile part filters (see 11, 12, and 14). Clicking when turned on will turn off the filter. Off by default. Pressing 3 will count as pressing this button.
14. Object filter button - selects the object part of tiles for editing, turning off all of the other tile part filters (see 11, 12, and 13). Clicking when turned on will turn off the filter. Off by default. Pressing 4 will count as pressing this button.
15. Find/replace tiles button - opens the Find and Replace Tiles UI. Holding Control and pressing F will count as pressing this button.
16. Tile selection button - opens and closes tile selection UI (see 17 - 20). The currently selected tile from the loaded map data sets is displayed on the button. Pressing the cancel keyboard shortcut (default Escape) while the tile selection UI is open will close it.
17. Tile selection page left - moves the tile selection panel (see 20) left one page (down in page number), refreshing the tiles displayed there. Scrolling the mousewheel down while the cursor is over the tile selection UI (see 17 - 20) will count as pressing this button. Not visible by default.
18. Tile selection page number - displays the current page number of the tile selection panel (see 20) over the total number of pages of tiles in the loaded map data sets. Not visible by default.
19. Tile selection page right - moves the tile selection panel (see 20) right one page (up in page number), refreshing the tiles displayed there. Scrolling the mousewheel up while the cursor is over the tile selection UI (see 17 - 20) will count as pressing this button. Not visible by default.
20. Tile selection panel - displays a subset of the tiles in the loaded map data sets in order from the top

left across the row to the right then down to the next row. Clicking a tile in the panel will select it for placement when the fill/place button (see 6) is active and display it on the tile selection button (see 16). Closed by default.

21. Tooltip text - displays information on the button/UI element under the cursor. Not visible when the cursor is over the map or the tile selection UI (see 17 - 20). When the tile selection UI is closed, the tooltip is displayed on the left side of the screen. Then the tile selection UI is open, the tooltip is displayed on the right side of the screen.
22. Debug text - displays information about the current state of the map editor. The first line shows the mode selected between the fill/place (see 6) and clear/remove (see 7) buttons. The second line shows the selected tile part filter (see 11 - 14). The third line shows the position of the cursor on the map or (-1, -1, -1) if the cursor is off the map. Holding Control and pressing D will hide or show the debug text. Visible by default.
23. Switch modes button - toggles the Map Editor between editing tiles for the .MAP file and AI nodes for the .RMP file. Holding Control and pressing R will count as pressing this button.

## Find and Replace Tiles Interface



1. Find tile selection button - opens the tile selection UI (see the Find and Replace Tile Selection Interface below) for finding tiles. The currently selected tile from the loaded map data sets for finding is displayed on the button. Upon opening the Find and Replace Tiles UI, the selected tile from the Map Editor Interface (see Map Editor Interface 16) will be displayed here. Pressing the cancel keyboard shortcut (default Escape) while the tile selection UI is open will close it.
2. Find tile part filter - picks which tile part, Floor, West Wall, North Wall, Object, or Any, will be searched for the selected tile from the selection button (see 1). The default filter is “Any”, which means that all tile parts will be searched.
3. Handle current selection filter - determines how the search respects the tiles selected in the Map Editor between searching anywhere on the map, searching only within the selected tiles, and searching only outside the selected tiles. If no tiles are selected on the map in the Map Editor, the filter will be greyed out and the only option will be “Anywhere”. The default filter is “Anywhere”.
4. Handle found selection filter - determines how the tiles found in the search will change the selection on the map in the Map Editor between clearing the selection and creating a new selection, adding to the selection, and removing from the selection. If no tiles are selected on the map in the Map Editor, the filter will be greyed out and the only option will be “Create New Selection”. The default filter is “Create New Selection”.
5. Find button - performs a search through the tiles on the map according to the filters chosen (see 1 - 4), changes the selection of tiles in the Map Editor, then closes the Find and Replace Tiles UI. Pressing the OK keyboard shortcut (default Enter) will count as pressing this button.
6. Replace tile selection button - opens the tile selection UI (see the Find and Replace Tile Selection Interface below) for replacing tiles. The currently selected tile from the loaded map data sets for replacing is displayed on the button. Upon opening the Find and Replace Tiles UI, no tile will be displayed here. Pressing the cancel keyboard shortcut (default Escape) while the tile selection UI is

open will close it.

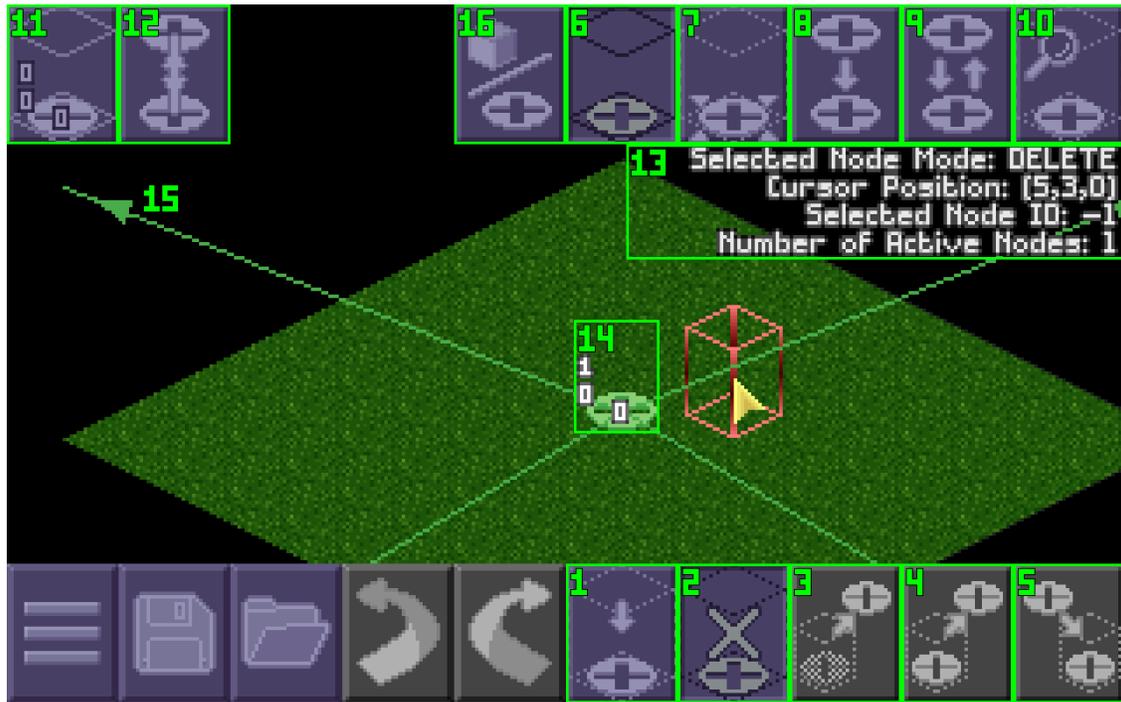
7. Replace mode filter - determines what is used to replace tiles in the found selection between the selected tile from the replace tile selection (see 6) and the first set of tile data from the clipboard. If there is no tile data in the clipboard, the filter will be greyed out and the only option will be “Selected Tile from MCD” (see 1). The default option is “Selected Tile from MCD”.
8. Replace tile part filter - picks which tile part, Floor, West Wall, North Wall, Object, or Found Tile Part, will be replaced with what is chosen by the replace mode filter (see 7). The default filter is “Found Tile Part”, which means that only tile parts matched by the search criteria (see 1 - 4) will be edited.
9. Replace clear filter - determines whether the tile selection created by the search criteria (see 1 - 4) will be left as-is before replacing or will be cleared of all tile data first. The default option is “Don’t Clear First”.
10. Replace button - performs a search through the tiles on the map according to the filters chosen (see 1 - 4), changes the selection of tiles in the Map Editor, edits the tile contents according to the replace options chosen (see 6 - 9), then closes the Find and Replace Tiles UI. Pressing the OK keyboard shortcut (default Enter) while holding Control will count as pressing this button.
11. Cancel button - returns to the Map Editor. Pressing the cancel keyboard shortcut (default Escape) counts as pressing this button.

## Find and Replace Tile Selection Interface



1. Tile selection page left - moves the tile selection panel (see 4) left one page (down in page number), refreshing the tiles displayed there. Scrolling the mousewheel down while the cursor is over the tile selection UI (see 1 - 4) will count as pressing this button.
2. Tile selection page number - displays the current page number of the tile selection panel (see 4) over the total number of pages of tiles in the loaded map data sets.
3. Tile selection page right - moves the tile selection panel (see 4) right one page (up in page number), refreshing the tiles displayed there. Scrolling the mousewheel up while the cursor is over the tile selection UI (see 1 - 4) will count as pressing this button.
4. Tile selection panel - displays a subset of the tiles in the loaded map data sets in order from the top left across the row to the right then down to the next row. Clicking a tile in the panel will select it for either the Find or Replace tile selection buttons (see Find and Replace Tiles Interface 1 and 8) depending on which was clicked to open this panel and display it on that button.

## Route Editor Interface



1. Create/select button - switches the editing mode for right-clicking on the map or nodes to creating, selecting, or creating connections to or from nodes. Cannot be active at the same time as the delete/remove button (see 2), and clicking this button will turn off the delete/remove button. Off by default.
2. Delete/remove button - switches the editing mode for right-clicking on the map or nodes to deleting or removing connections to or from nodes. Cannot be active at the same time as the create/select button (see 1), and clicking this button will turn off the create/select button. On by default.
3. Cut button - removes the selected nodes and saves them to the clipboard. This button will be greyed out and do nothing when no nodes are currently selected. Holding Control and pressing X will count as pressing this button.
4. Copy button - saves the selected nodes to the clipboard. This button will be greyed out and do nothing when no nodes are currently selected. Holding Control and pressing C will count as pressing this button.
5. Paste button - switches the editing mode for right-clicking on the map to placing the nodes saved to the clipboard onto the map at the clicked location. This button will be greyed out and do nothing when the clipboard has nothing saved to it. Holding Control and pressing V will count as performing a right-click at the location of the cursor with paste mode active without toggling this button.
6. Select/delete filter button - switches the editing mode to creating/selecting nodes when the create/select button (see 1) is on and deleting nodes when the delete/remove button (see 2) is on. Clicking will turn off all of the other node mode filter buttons (see 7, 8, and 9). On by default. Pressing 1 will count as pressing this button.
7. Move filter button - switches the editing mode to moving the selected node when the create/select button (see 1) is on and deleting nodes when the delete/remove button (see 2) is on. Clicking will turn

off all of the other node mode filter buttons (see 6, 8, and 9). Off by default. Pressing 2 will count as pressing this button.

8. One-way link filter button - switches the editing mode to creating one-way links between the selected node and a right-clicked node when the create/select button (see 1) is on and removing the link from the selected node to a right-clicked node when the delete/remove button (see 2) is on. Clicking will turn off all of the other node mode filter buttons (see 6, 7, and 9). Off by default. Pressing 3 will count as pressing this button.
9. Two-way link filter button - switches the editing mode to creating two-way links between the selected node and a right-clicked node when the create/select button (see 1) is on and removing any links between the selected node to a right-clicked node when the delete/remove button (see 2) is on. Clicking will turn off all of the other node mode filter buttons (see 6, 7, and 8). Off by default. Pressing 4 will count as pressing this button.
10. Find/replace nodes button - opens the Find and Replace Nodes UI. Holding Control and pressing F will count as pressing this button.
11. Node information button - opens and closes the node information panel. If the node links panel (see
12. Node links button - opens and closes the node links panel. If the node information panel (see
13. Debug text - displays information about the current state of the map editor. The first line shows the mode selected for the action performed when right-clicking the map or nodes by the choice of create/select or delete/remove buttons (see 1 and 2) and filter buttons (see 6 - 9). The second line shows the position of the cursor on the map or (-1, -1, -1) if the cursor is off the map when no node is selected, and the position of the selected node when one is selected. The third line shows the ID number of the selected node when one is selected or -1 when no node is selected. The fourth line shows the number of nodes on the map. Holding Control and pressing D will hide or show the debug text. See 2 in the Node Information Panel image below for a version of this text with a node selected. Visible by default.
14. Node marker - nodes on the map are indicated by this icon. The numbers on the marker shows a node's spawn priority (see Node Information Panel 7), rank (see Node Information Panel 5), and ID number (see Node Information Panel 3) from top to bottom. The color of a marker will change from green to orange when selected (see 1 in the image for the Node Information Panel below).
15. Link marker - links between nodes are indicated by lines drawn between the nodes. The style of the lines and which ones are visible are configurable through the Map Editor Options Menu. The arrows on the lines indicate the directions of the link. The color of lines for one-way links from and two-way links to or from a selected node will change from green to orange (see the image for the Node Information Panel below).
16. Switch modes button - toggles the Map Editor between editing tiles for the .MAP file and AI nodes for the .RMP file. Holding Control and pressing R will count as pressing this button.

## Node Information Panel



1. Selected node marker - a selected node's marker will be displayed as orange instead of green. The information for the selected node will appear in the Node Information Panel.
2. Debug text - see 13 in the Route Editor Interface above for an explanation and the version of this text when no node is selected.
3. Node ID and position - shows the selected node's ID number and position on the map. The ID number is also displayed as the bottom number on the node's marker on the map (see 1). If no node is selected, this text shows “-” for the ID number and (-1, -1, -1) for the position.
4. Node type - shows which types of AI units will spawn on this node or use it for patrolling. Clicking shows a drop-down menu of possible values for the selected node's type, and clicking on one of those options will change the node to that type. The default value for a newly created node is “Any Unit”. If no node is selected, this text shows “-”.
5. Node rank - shows which AI unit ranks will preferentially spawn on this node or use it for patrolling. The rank value is also displayed as the middle number on the node's marker on the map (see 1). Clicking shows a drop-down menu of possible values for the selected node's rank, and clicking on one of those options will change the node to that rank. The default value for a newly created node is “Civilian/Scout”. If no node is selected, this text shows “-”.
6. Patrol priority - shows the priority of the selected node for AI units when patrolling. Clicking shows a drop-down menu of possible values for the selected node's patrol priority, and clicking on one of those options will change the node to that priority. The default value for a newly created node is 0. If no node is selected, this text shows “-”.
7. Spawn priority - shows the priority for spawning. The spawn priority value is also displayed as the top number on the node's marker on the map (see 1). Clicking shows a drop-down menu of possible values for the selected node's rank, and clicking on one of those options will change the node to that rank.

The default value for a newly created node is 0. If no node is selected, this text shows “-”.

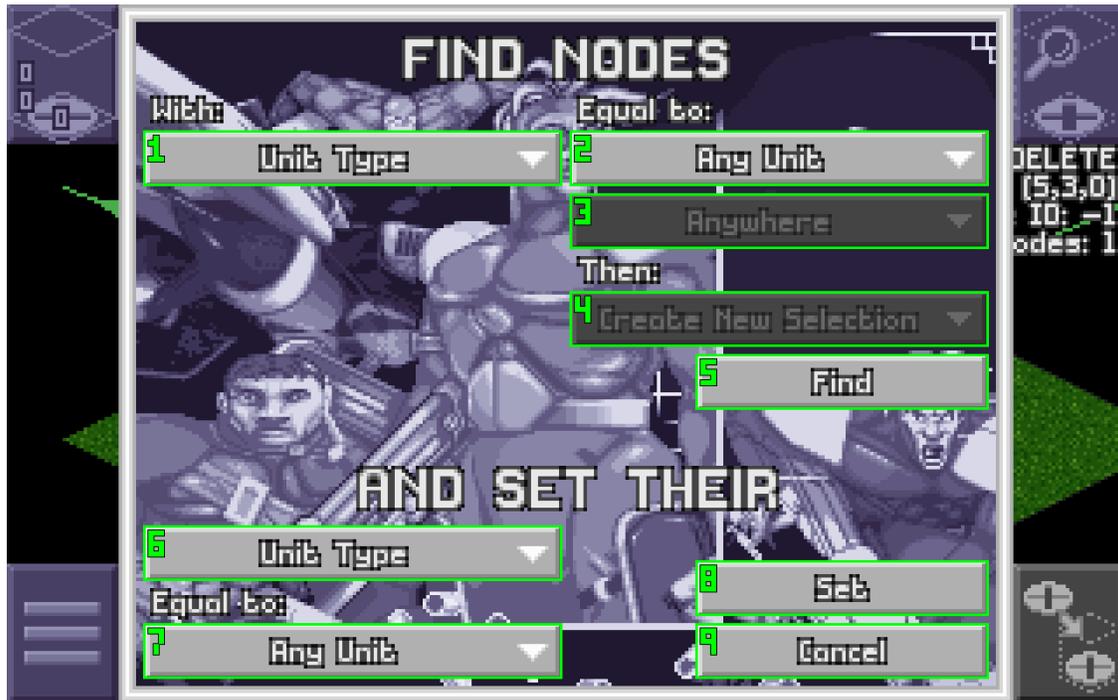
8. Reserved for AI - shows whether AI units will target the tile on which the node is located during base defense missions. Clicking shows a drop-down menu of possible values for the selected node's reserved flag, and clicking on one of those options will change the node to have that value. The AI will target the tile with a node on it if this value is 5. The default value for a newly created node is 0. If no node is selected, this text shows “-”.

## Node Links Panel



1. Node ID and position - shows the selected node's ID number and position on the map. If no node is selected, this text shows "-" for the ID number and (-1, -1, -1) for the position.
2. Node links - shows which map exits or the ID numbers for the nodes linked from the selected node. Clicking shows a drop-down menu of possible map exits/nodes to link to, and clicking on one of those options will create that link. Selecting "Unused" from the drop-down menu will remove a link. By default, newly created nodes will have no links. When the one-way link filter button or two-way link filter button (see Route Editor Interface 8 and 9) is on, then the selected node's link that will be edited by right-clicking another node or map exit is highlighted in orange and the remaining links will be grey. If no node is selected, the text fields show "-".
3. Link types - shows the types for the selected node's links. This value is unused in Open X-Com, and should only be used to display legacy data. Clicking shows a drop-down menu of possible values for the link's rank, and clicking on one of those options will change the link to have that value. The default value is "Any Unit". If no node is selected, the text fields show "-".

## Find and Replace Nodes Panel

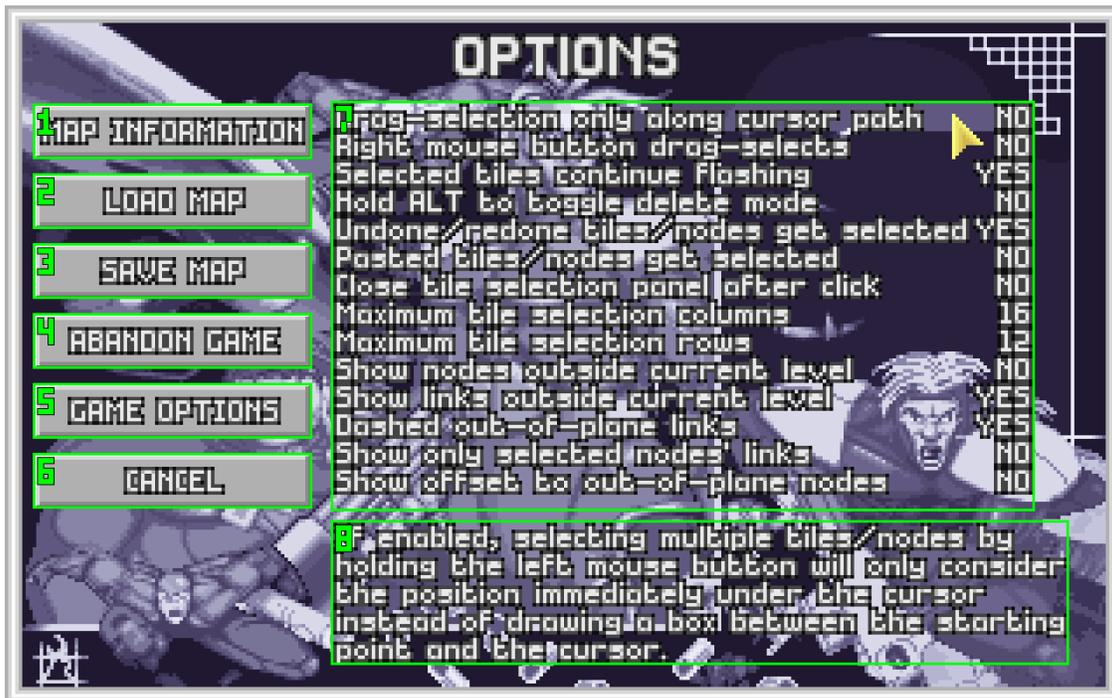


1. Find parameter filter - determines which node parameter will be used for searching. Changing the filter populates the find value filter (see 2) with the set of values appropriate for the parameter chosen. The default option is “Unit Type”.
2. Find value filter - determines what value of the parameter selected by the find parameter filter (see 1) nodes need to match to be selected when the find button (see 5) is pressed. The default value selected by the filter depends on the option chosen in the find parameter filter (see 1).
3. Handle current selection filter - determines how the search respects the nodes selected in the Map Editor between searching anywhere on the map, searching only within the selected nodes, and searching only outside the selected nodes. If no nodes are selected on the map in the Map Editor, the filter will be greyed out and the only option will be “Anywhere”. The default filter is “Anywhere”.
4. Handle found selection filter - determines how the nodes found in the search will change the selection on the map in the Map Editor between clearing the selection and creating a new selection, adding to the selection, and removing from the selection. If no nodes are selected on the map in the Map Editor, the filter will be greyed out and the only option will be “Create New Selection”. The default filter is “Create New Selection”.
5. Find button - performs a search through the nodes on the map according to the filters chosen (see 1 - 4), changes the selection of nodes in the Map Editor, then closes the Find and Replace Nodes UI. Pressing the OK keyboard shortcut (default Enter) will count as pressing this button.
6. Set parameter filter - determines which node parameter will be set on the found nodes after pressing the set button (see 8). Changing the filter populates the set value filter (see 7) with the set of values appropriate for the parameter chosen. The default option is “Unit Type”.
7. Set value filter - determines what value of the parameter selected by the set parameter filter (see 6) will be edited when the set button (see 8) is pressed. The default value selected by the filter depends

on the option chosen in the set parameter filter (see 6).

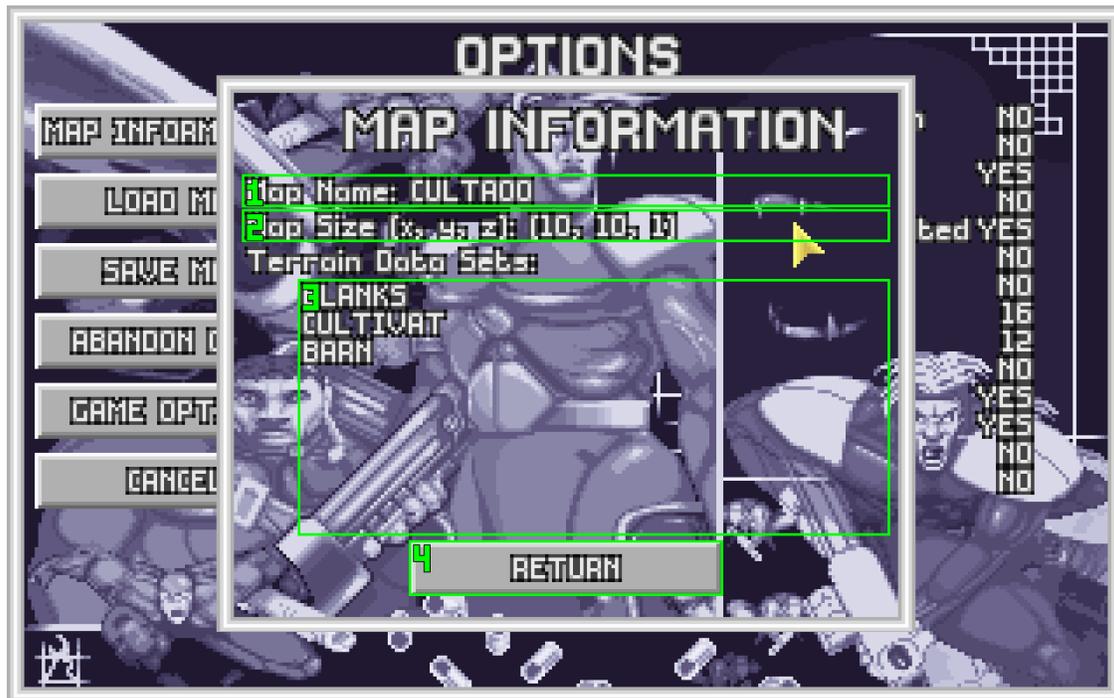
8. Set button - performs a search through the nodes on the map according to the filters chosen (see 1 - 4), changes the selection of nodes in the Map Editor, edits the node parameters/values according to the set options chosen (see 6 - 7), then closes the Find and Replace Nodes UI. Pressing the OK keyboard shortcut (default Enter) while holding Control will count as pressing this button.
9. Cancel button - returns to the Map Editor. Pressing the cancel keyboard shortcut (default Escape) counts as pressing this button.

## The Map Editor Options Menu



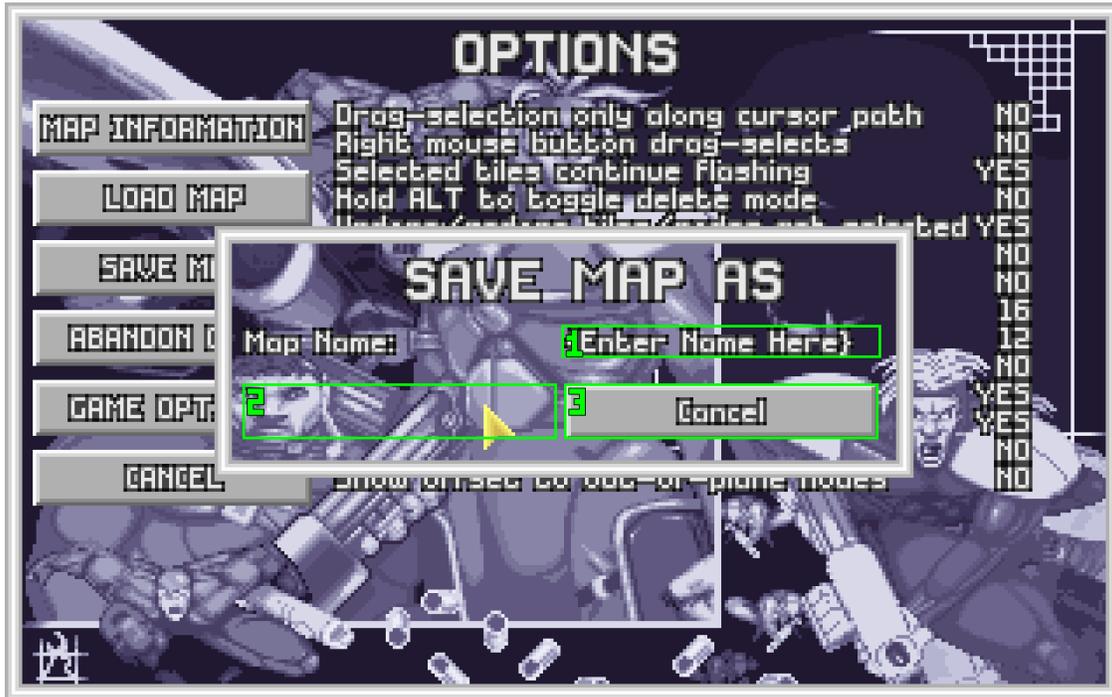
1. Map information button - brings up the Map Information Window.
2. Load map button - brings up the main Map Editor Menu for selecting a different map to edit or creating a new map. Closes this options menu when pressed.
3. Save map button - saves the current state of the map being edited to a file. If no name has been given for the map yet, brings up the Save Map As Menu.
4. Abandon game button - returns to the Main Menu.
5. Game options button - brings up the standard Game Options Menu with the Video tab open and the Battlescape interface colors and background.
6. Cancel button - returns to the Map Editor.
7. User options - shows a list of user options for the map editor. Clicking on an option that is either on or off will toggle the state of that option between on (shows "YES") and off (shows "NO"). Left-clicking on an option that is a numerical value will increase the value by 1 while right-clicking will decrease the value by 1. Values outside a defined maximum and minimum for each option will loop back around to a value within those bounds. A list of the available options and descriptions of their functionality is given below after the UI windows documentation.
8. Descriptions of options - shows a description of the user option currently highlighted in the list above (see 7). When the cursor is not highlighting a user option, no description is shown.

## The Map Information Window



1. Map name - displays the name of the map being edited. If a new map hasn't been given a name yet, displays a "Enter Name Here" message.
2. Map size - displays the size of the map being edited.
3. Map data sets - displays the list of map data sets associated with the map being edited according to the chosen terrain or craft/UFO battlescapeTerrainData.
4. Return button - closes the Map Information Window.

## The Save Map As Menu



1. Edit map name - changes the name of the new map. Displays the name of the map being edited or the "Enter Name Here" message if map has no name given yet. Follows the same editing rules as the Edit map name field in the New Map Menu (see The New Map Menu 4).
2. OK button - saves the map with the given name and stores the name of the map in the editor. Not visible when the name of the map is empty and the "Enter Name Here" message is displayed in the name edit field (see 1).
3. Cancel button - closes the Save Map As Menu without saving the map or changing the name.



Save As Menu with a non-empty name and the OK button (see 2) visible.

## MAP EDITOR FUNCTIONALITY

Once an existing map is opened or a new map is created in the editor, the GUI will be initialized in the “CLEAR TILES” mode with no particular tile part selected (see Map Editor Interface 7 and 11 - 14). From here, edits to the map are made by selecting settings in the GUI, then right-clicking the desired tile or node.

### Selecting Multiple Tiles or Nodes

Multiple tiles or nodes can be selected for editing by holding down the left mouse button and dragging the cursor across the map. By default, selection will create a rectangular box of tiles between the position on the map where the button was first clicked and the current position of the cursor on the map. While the mouse button is held down, the tiles in the selection area will flash. When the button is released, the tiles that are flashing or the nodes on those tiles will be selected for editing. Selected tiles will have a marker placed on them and can be configured in the user options to continue flashing after the button is released. An alternate option is available that will only select tiles directly along the path the cursor has taken since pressing the button, as if “painting” a selection. If the path style selection is enabled, a special marker will appear on the cursor on the map.

If the option for it is enabled, the right mouse button can select multiple tiles as well when held down, performing the opposite selection style of the left mouse button between the box and path selections. The right mouse button will also have a brief delay before starting to drag-select when held, leaving faster clicks for performing edits.

If a set of tiles was previously selected, they will be de-selected unless Shift or Control is held as described below. Left-clicking in the black area outside the boundaries of the map (when the rectangular cursor highlighting a tile is no longer visible) will de-select any selected tiles.

The way tiles are added to a selection can be modified by holding the Shift and Control buttons. Holding the Shift button alone will make any previous selection remain after the mouse button is released, adding to the current selection. Holding the Control button will switch the selection box or path from creating a new selection to removing tiles from the current selection. Finally, holding both Shift and Control will only select tiles that are both in the selection box or path and in any previous selection. These selection modes can be switched at will while the mouse button is being held - the selection preview will update accordingly to show what the selection will be when the mouse button is released. The mode active when the mouse button is released will be the one used to make the selection. A marker will appear on the cursor to indicate which mode is active.

### Performing Tile Edits

With the default settings, right-clicking will clear all the tile object data from the clicked tile(s). To clear only specific parts of a tile, one of the tile part filters (see Map Editor Interface 11 - 14) must be selected. If one of these is selected, it can be de-selected by left-clicking on it again, returning to clearing the entire tile instead of a specific part.

Clicking the Fill/place button (see Map Editor Interface 6) will switch the edit mode to placing the selected MCD entry into either the tile part defined by the MCD data or a specific tile part when one of the tile part filters is enabled. The currently selected MCD entry is displayed in the upper-left corner of the screen and can be changed by clicking on the icon to bring up the Tile Selection GUI (see 16 - 20).

If a set of tiles is selected, as indicated by a marker (and flashing if the option is turned on), then right-click

actions will only be performed if the cursor is over one of the selected tiles. If no tiles are selected, then only the tile currently under the cursor will be edited.

Once a change to the map has been made, it is saved to the editor's memory for undoing/redoing actions but not the map file. If a change is exactly the same as the previous one saved, it will not be repeated or saved to the editor's memory. In the future there will likely be a limit to the number of changes stored in memory to prevent multiple large changes from causing memory problems.

## Performing Node Edits

Left-clicking a node on the map will select that node and cause its information to be displayed in the Node Information and Node Links panels. Left-clicking a tile on the map that does not have a node will de-select any selected node. Drag-selecting can select multiple nodes, in which case only fields that share the same values across all the selected nodes will be displayed in the Node Information and Node Links panels, any other fields will show “-”.

Under the default settings of the Route Editor Interface, right-clicking a node/selected nodes on the map will delete that node. Clicking the Create/select button (see Route Editor Interface 1) with the Select/delete filter button on (see Route Editor Interface 6) will switch the edit mode to creating a new node with the default values at the location of the cursor on the map. If a node already exists at the location of the cursor, right-clicking will select that node instead.

Clicking the Move filter button (see Route Editor Interface 7) will switch the edit mode to deleting nodes on right-click with the Delete/remove button on (see Route Editor Interface 2). With the Create/select button on (see Route Editor Interface 1), right-clicking a tile on the map with no nodes will move the selected node to that position. If multiple nodes are selected, right-click will place a marker with a “1” on it, creating a reference point for moving the nodes. A second right-click will place a marker with a “2” on it and a line with a arrow will be drawn between the two markers to indicate the direction and distance all the selected nodes will be moved. A third right-click anywhere is necessary to confirm the move. If one of the selected nodes cannot move to its new location, the editor will attempt to select the next available tile closer to the node's original position from the new location. If this fails, the node will remain at its original location. Left-clicking, switching to Tile Edit Mode, or picking a new filter button will cancel the markers. Without a node selected, right-clicking will perform no action.

Clicking the One-way link filter button (see Route Editor Interface 8) will switch the edit mode to removing the link from the selected node(s) to a right-clicked other node or map exit. With the Create/select button on (see Route Editor Interface 1), right-clicking another node or map exit will create a link from the selected node(s) to the clicked node or map exit. The link will preferentially use an “Unused” links on the selected node(s) and otherwise overwrite the links from top to bottom in the Node Links Panel. If the Node Links Panel is open with this edit mode on, the link that will be edited is highlighted in orange and the others will be greyed out. The black area outside the map's boundaries count as map exits for this edit mode - when the cursor is pointing outside the map, the rectangular box used to indicate a tile position will not be shown. No actions are performed if no node is selected, the selected node is clicked, or a tile on the map with no node is clicked.

Clicking the Two-way link filter button (see Route Editor Interface 9) will switch the edit mode to removing the link from the selected node(s) to a right-clicked other node or map exit and the link from the clicked node/map exit back to the selected node. With the Create/select button on (see Route Editor Interface 1), right-clicking another node or map exit will create a link from the selected node(s) to the clicked node or map exit and a link from the clicked node/map exit back to the selected node. The link will preferentially use an “Unused” links on both the selected and clicked nodes and otherwise overwrite the links from top to bottom in the Node Links Panel. If the Node Links Panel is open with this edit mode on, the link

that will be edited is highlighted in orange and the others will be greyed out. The black area outside the map's boundaries count as map exits for this edit mode - when the cursor is pointing outside the map, the rectangular box used to indicate a tile position will not be shown. No actions are performed if no node is selected, the selected node is clicked, or a tile on the map with no node is clicked.

The Node Information Panel is used to edit the characteristics of the selected node(s). The ID number for a specific node may never be changed, and the position of the node cannot be changed from the Node Information Panel - only values with a drop-down menu can be changed from this panel.

As an alternative to creating or removing links using the One-way link and Two-way link modes described above, the drop-down menus (see Node Link Panel 2) in the Node Link Panel may be used. When a node is selected, the drop-down menus will be populated with the "Unused" value first, followed by the map exits, and then a list of node IDs to which a link can be created. Selecting "Unused" removes the link from the selected node, but it will not remove the link from the other node to the selected node if it exists. Only one-way links can be created or removed using this panel - creating or removing a two-way link requires editing both nodes individually with this panel. The link type values may be edited through this panel using their drop-down menus (see Node Link Panel 3), but these values are used nowhere else in Open X-Com. The values are shown only for completeness' sake of displaying all legacy information in the RMP file and should otherwise be ignored.

## **Undo/Redo**

The changes executed to a map are stored in the editor's memory in the order in which they were done. The tooltip for the Undo/Redo buttons (see Map Editor Interface 4 and 5) will show how many edits are stored in memory and where in the list the next undo/redo will occur. Pressing the Undo button will revert whichever change is at the current position in the list of changes, and move the current position to the next change backwards in the list. This will start at the most recent change and move backwards until the first change in the editor's memory is reached, at which point the undo button will be greyed out and disabled. Performing a new change or pressing the redo button will re-enable the undo button.

The Redo button will be greyed out and disabled if the current position in the list of changes is at the most recent change in that list. It will be enabled once an undo is successful. When pressing the Redo button, the position in the list of changes will be moved forward once and the change at that new position in the list will be executed. Once the most recent change is reached, the Redo button will be disabled again.

When making a new change not saved at the current position in the map editor's memory, any changes forward from the current position to the most recent in the list will be forgotten, making the new change the most recent.

## **Cut/Copy/Paste**

Selections of tiles or nodes can be saved to a clipboard by using the Cut or Copy buttons (see Map Editor Interface 8 - 9 and Route Editor Interface 3 - 4). Toggling the Paste button (see Map Editor Interface 10 and Route Editor Interface 5) will switch right-clicking on the map to performing a paste action at the location of the cursor. When switching between tile and node editing modes, the Paste button will automatically be toggled off.

In tile editing mode, a right-click with the current selection empty will attempt to place the contents of the tile clipboard. The location of the cursor is treated as a reference point for the clipboard contents, being the bottom-z-level northwest corner of a rectangular box that encompasses the clipboard contents. That is, any tiles pasted from the clipboard must be either at the same or higher x, y, z coordinate values as the reference

point. This reference point can be approximately previewed by using the rectangular box drag-select mode with Control and Shift held to find the smallest box that will include all of tiles cut or copied to the clipboard. Any clipboard contents that would extend outside the limits of the map when placed will not be pasted. If there are tiles in the current selection, then a similar reference point is chosen as the bottom-z-level northwest corner of a box surrounding the selection, and the clipboard contents will only change tiles in the current selection. Furthermore, if there are any tiles in the current selection, right-clicking outside of them in paste mode will not perform any action.

With the Fill/place button (see Map Editor Interface 6) toggled on, pasting will only change the parts of tiles that are not empty in the clipboard; pasting an empty tile from the clipboard will do nothing. If one of the tile part filters (see Map Editor Interface 11 - 14) is active, then only clipboard contents that match that particular tile part will be pasted. If the Clear/remove button (see Map Editor Interface 7) is enabled instead, then tiles that would be changed by pasting the contents will be cleared first before pasting, either the entire tile when no tile part filter is selected or just the selected tile part.

In node editing mode, right-clicking will place all of the nodes in the node clipboard. Again, the location of the cursor is treated as a reference point of the bottom-z-level northwest corner of the smallest rectangular box that would select all of the nodes that were cut or copied to the clipboard. If any of the nodes would be placed outside of the limits of the map or on top of an already placed node, they are moved according to the same position validation methods used for moving nodes as described above, with the exception that they are shifted toward the center of the map instead of an original location. In the case this validation method fails, the nodes are placed in the first available tile starting at position (0, 0, 0) and scanning through all the tiles of the map in order of x first, then y, then z. In the very rare case that no tiles are available, the node is not placed. Pasted nodes will retain their links to and from other nodes in the clipboard and to the exits of the map but will not be linked to any of the nodes on the map before the paste action.

In both tile and node editing modes, holding Control and pressing V will perform a paste action as if right-clicking the location under the cursor without toggling paste mode on or off, subject to everything described above for pasting from the clipboard.

While OpenXcom Extended remains running, the contents of both tile and node clipboards are persistent between different maps loaded into the editor. This allows for pasting the contents of one map into another. Tile data is stored according to the position of the MCD file within a terrain and the position of the tile within that MCD file. Pasting tiles only attempts to match those positions, not the specific MCD files - having the pasted tiles match the map from which they were cut/copied is only guaranteed if the type and order of MCD files within a terrain is the same for both the cut/copied map and the map in which they are pasted. Node data does not depend on terrains or MCD files, so the pasted nodes will retain all of their values and relative positions with respect to each other as long as there is room on the map in which they are pasted.

## **Saving Map Files**

Clicking the Save button either directly on the Map Editor Interface or in the Map Editor Options Menu will output the current state of the map in the editor as it is displayed to a MAP and a RMP file in the OpenXcom user folder for the current master mod. The name of the map and the list of MCDs used will be printed to the openxcom.log file in the ruleset format used for terrains. As such, it can be directly copied into a terrains ruleset file for use in a mod if desired. The output MAP and RMP files will need to be copied into a mod and loaded as a terrain, craft, or UFO in order to be edited again if the editor is closed.

Attempting to save an unnamed new map or pressing holding Control and Shift and pressing s from the Map Editor Interface will bring up the Save Map As Menu. The name entered in that window will be the name of the file saved with the addition of the .MAP extension.

If both the MAP and RMP files saved successfully, a message indicating this will flash briefly near the bottom of the editor window. If over 256 nodes are on the map (see Route Editor Interface 13 for the number of nodes), links to nodes that are over this limit cannot be saved due to the limit of RMP files holding 8 bit data values. Links that cannot be saved and the nodes with links to which cannot be saved will have red markers instead of green (see Route Editor Interface 14 and 15). If there are more than 256 nodes on the map, a warning message will flash briefly near the bottom of the editor window when saving.

## User Options

See the Map Editor Options Menu 7 for where to toggle these options. The available options are:

- Drag-selection only along cursor path - toggles whether holding the left mouse button will select multiple tiles/nodes by drawing a rectangular box between the position where the button was first clicked and the current cursor position (off) or by picking only the positions along the path where the cursor has been since the button was first clicked (on). Turned off by default.
- Right mouse button drag-selects - toggles whether the right mouse button will select multiple tiles/nodes if held longer than the threshold for standard OpenXcom drag-scrolling (default 300 milliseconds, can only be changed by editing the “dragScrollTimeTolerance” line in your options.cfg file). If enabled, the right mouse button will use the opposite mode of the one chosen for the left mouse button by the “Drag-selection only along cursor path” option. Turned off by default.
- Selected tiles continue flashing - toggles whether selected tiles will continue to flash after a drag-selection finishes in tile editing mode. This option does not affect the flashing of tiles while the mouse button is held down for a drag-selection. This option also does not affect current tile selections. A new selection will need to be made before it takes affect. Turned on by default.
- Hold ALT to toggle delete mode - toggles whether holding the ALT button while performing an action with right-click temporarily toggles to the opposite of whichever mode you have selected between create/select and remove/delete (see Map Editor Interface 6 -
- Undone/redone tiles/nodes get selected - toggles whether tiles or nodes changed by an undo/redo action will be selected instead of the current selection (on) or the current selection remains the same after an undo/redo action (off). Turned off by default.
- Pasted tiles/nodes get selected - toggles whether tiles or nodes placed by a paste action will be selected instead of the current selection (on) or the current selection remains the same after a paste action (off). Turned off by default.
- Close tile selection panel after click - toggles whether the tile selection panel (see Map Editor Interface 20) will automatically close when a tile from that UI is clicked. Turned off by default.
- Maximum tile selection columns - sets an upper limit for how many columns can appear in the tile selection panel (see Map Editor Interface 20). There will always be a hard upper limit of half of the width of the screen and a lower limit of showing 2 columns. This value can be changed between 2 and 32 from this menu and higher values can be set by editing the “mapEditorMaxTileSelectionColumns” line in your options.cfg file. Causes the Map Editor Interface to reset in order to take effect. The default value is 16.
- Maximum tile selection rows - sets an upper limit for how many rows can appear in the tile selection panel (see Map Editor Interface 20). There will always be a hard upper limit of the height between the upper and lower buttons in the Map Editor and Tile Editor Interfaces and a lower limit of showing

2 rows. This value can be changed between 2 and 24 from this menu and higher values can be set by editing the “mapEditorMaxTileSelectionRows” line in your options.cfg file. Causes the Map Editor Interface to reset in order to take effect. The default value is 12.

- Show nodes outside current level - toggles whether or not to show the nodes above and below the current z-level of the camera on the map. Nodes not on the current z-level are shown with dotted markers instead of solid (see Route Editor Interface 14) with this option on. Selected nodes are always shown even when outside the current z-level and with this option off. Not recommended for maps with large numbers of nodes. May be helpful to get an overview of all nodes on the map and their relative positions with the “Show offset to out-of-plane nodes” turned on. Turned off by default.
- Show links outside current level - toggles whether or not to show links from the visible nodes to nodes above or below the current z-level of the camera on the map. Links to map exits are always displayed as long as the node from which they originate is visible. All links from selected nodes are always shown whether or not this option is on. Not recommended for maps with large numbers of nodes with the “Show nodes outside current level” option on. May be helpful when editing links for AI patrol routes that include multiple z-levels. Turned on by default.
- Dashed out-of-plane links - toggles whether links to nodes above or below the current z-level of the camera on the map are shown as solid lines (off, see Route Editor Interface 15) or dashed. Links to map exits from visible nodes are always drawn as solid lines. Recommended to differentiate between links to nodes within the current z-level and links going or coming from outside the current z-level. Turned on by default.
- Show only selected nodes’ links - toggles whether to show links from all visible nodes (off) or only for selected nodes (on). Links from selected nodes are always shown. May be helpful to reduce visual clutter when not editing links. Turned off by default.
- Show offset to out-of-plane nodes - toggles whether to show dashed rectangular boxes from visible nodes above or below the current z-level of the camera on the map to the current z-level, similar to when the cursor is on a tile with no floor above the bottom z-level. Not recommended for maps with large numbers of nodes with the “Show nodes outside current level” option on. May be helpful when dealing with nodes for flying units or for linking from a selected node to others above or below its z-level. Turned off by default.

## INTERFACE GRAPHICS AND TRANSLATION

The Map Editor Interface uses a series of  $32 \times 40$  pixel sprites in the surface set MapEditorIcons for its buttons. The indices for these buttons are:

Index	Button	Map/Node Editor Interface Number
Tile Mode Interface		
0:	Options	1
1:	Save	2
2:	Load	3
3:	Undo	4
4:	Redo	5
5:	Fill/place	6
6:	Clear/remove	7
7:	Cut	8
8:	Copy	9
9:	Paste	10
10:	Floor filter	11
11:	West wall filter	12
12:	North wall filter	13
13:	Object filter	14
14:	Find/replace	15
15:	Tile selection	16
16:	Tile selection page left	17
17:	Tile selection page number	18
18:	Tile selection page right	19
19:	Tile/Route mode toggle	23
20:	Tile selection panel UL	20
21:	Tile selection panel UC	20
22:	Tile selection panel UR	20
23:	Tile selection panel ML	20
24:	Tile selection panel MC	20
25:	Tile selection panel MR	20
26:	Tile selection panel LL	20
27:	Tile selection panel LC	20
28:	Tile selection panel LR	20
29:	Drag-selection start/end marker	N/A
30:	Selected tiles marker	N/A
31:	Drag-selection by path marker	N/A
32:	Drag-selection addition marker	N/A
33:	Drag-selection subtraction marker	N/A
34:	Drag-selection intersection marker	N/A
Route Mode Interface		
35:	Create/select	1
36:	Delete/remove	2
37:	Cut	3
38:	Copy	4
39:	Paste	5
40:	Select/delete filter button	6
41:	Move filter	7
42:	One-way link filter	8
43:	Two-way link filter	9
44:	Find/replace	10
45:	Node information	11

46:	Node links	12
47:	(Unused)	N/A
48:	(Unused)	N/A
49:	Tile/Route mode toggle	16
50:	Node info/link panel UL	11 & 12
51:	Node info/link panel UC	11 & 12
52:	Node info/link panel UR	11 & 12
53:	Node info/link panel ML	11 & 12
54:	Node info/link panel MC	11 & 12
55:	Node info/link panel MR	11 & 12
56:	Node info/link panel LL	11 & 12
57:	Node info/link panel LC	11 & 12
58:	Node info/link panel LR	11 & 12
59:	(Unused)	N/A

Note that indices 20-28 are used for the background of the tile selection panel. Index 20 is used for the upper left corner, index 22 for the upper right, and index 21 for the rest of the upper border. Index 23 is used for the left side border of the panel, index 25 for the right side border, and index 24 for all the space on the tile selection grid not on the borders. Finally, index 26 is for the lower left corner, index 28 for the lower right, and index 27 for the center pieces of the bottom border.

Similarly, indices 50-58 are used for the background of both the Node Information Panel and the Node Links Panel, following the same pattern as the background for the tile selection panel.

The en-US strings for the translation of all of the Map Editor menus and interfaces are:

Main Menu:

STR\_MOD\_TOOLS: "Map Editor"

Map Information Window:

STR\_MAP\_EDITOR\_INFO: "MAP INFORMATION"

STR\_EDITOR\_MAP\_NAME: "Map Name: {0}"

STR\_EDITOR\_MAP\_SIZE: "Map Size (x, y, z): ({0}, {1}, {2})"

STR\_EDITOR\_TERRAINS: "Terrain Data Sets:"

STR\_RETURN\_TO\_PREVIOUS\_MENU: "RETURN"

Map Editor Menu:

STR\_MAP\_EDITOR: "MAP EDITOR"

STR\_TERRAIN: "TERRAIN"

STR\_NEW\_MAP: "Create New Map"

STR\_MAP\_EDITOR\_MENU\_SEARCH: "Search:"

Map Editor Options Menu:

STR\_MAP\_INFO: "MAP INFORMATION"

STR\_LOAD\_MAP: "LOAD MAP"

STR\_SAVE\_MAP: "SAVE MAP"

STR\_DRAG\_SELECT\_PAINTING: "Drag-selection only along cursor path"

STR\_DRAG\_SELECT\_PAINTING\_DESC: "If enabled, selecting multiple tiles/nodes by holding the left mouse button will only consider the position immediately under the cursor instead of drawing a box between the starting point and the cursor."

STR\_RIGHT\_CLICK\_DRAG\_SELECT: "Right mouse button drag-selects"

STR\_RIGHT\_CLICK\_DRAG\_SELECT\_DESC: "If enabled, allows the right mouse button to select multiple tiles/nodes as long as the mouse press is longer than the drag-scroll threshold. Uses the opposite drag-selection style chosen by the 'Drag-selection only along cursor path' option."

STR\_SELECTED\_TILES\_KEEP\_FLASHING: "Selected tiles continue flashing"

STR\_SELECTED\_TILES\_KEEP\_FLASHING\_DESC: "If enabled, tiles that are selected will keep flashing after any drag-selections are completed. Does not affect flashing while a drag-selection is in progress."

STR\_HOLD\_ALT\_TO\_TOGGLE\_MODE\_SWITCH: "Hold ALT to toggle delete mode"

STR\_HOLD\_ALT\_TO\_TOGGLE\_MODE\_SWITCH\_DESC: "If enabled, holding the ALT button while performing a right click action will temporarily toggle the opposite of whichever mode you have selected between create/select and delete/remove."

STR\_UNDO\_REDO\_BECOMES\_SELECTION: "Undone/redone tiles/nodes get selected"

STR\_UNDO\_REDO\_BECOMES\_SELECTION\_DESC: "If enabled, on performing an undo/redo action the current selection will be de-selected and the changed tiles/nodes will be selected instead."

STR\_PASTED\_BECOMES\_SELECTION: "Pasted tiles/nodes get selected"

STR\_PASTED\_BECOMES\_SELECTION\_DESC: "If enabled, on performing a paste action the current selection will be de-selected and the pasted tiles/nodes will be selected instead."

STR\_CLOSE\_TILE\_SELECTION\_UL\_AFTER\_CLICK: "Close tile selection panel after click"

STR\_CLOSE\_TILE\_SELECTION\_UL\_AFTER\_CLICK\_DESC: "If enabled, the tile selection panel will automatically close after clicking to select a tile."

STR\_MAX\_NUMBER\_OF\_TILE\_SELECTION\_COLUMNS: "Maximum tile selection columns"

STR\_MAX\_NUMBER\_OF\_TILE\_SELECTION\_COLUMNS\_DESC: "Sets an upper limit for how many columns will appear in the tile selection panel. No matter the value here, the panel cannot be over half the width of the screen. Requires a restart of the editor to take effect."

STR\_MAX\_NUMBER\_OF\_TILE\_SELECTION\_ROWS: "Maximum tile selection rows"

STR\_MAX\_NUMBER\_OF\_TILE\_SELECTION\_ROWS\_DESC: "Sets an upper limit for how many rows will appear in the tile selection panel. No matter the value here, the panel will be limited by the height between the upper and lower editor buttons. Requires a restart of the editor to take effect."

STR\_SHOW\_OUT\_OF\_PLANE\_NODES: "Show nodes outside current level"

STR\_SHOW\_OUT\_OF\_PLANE\_NODES\_DESC: "If enabled, the nodes above and below the current z-level of the map are displayed but with dotted markers."

STR\_SHOW\_OUT\_OF\_PLANE\_NODE\_LINKS: "Show links outside current level"  
 STR\_SHOW\_OUT\_OF\_PLANE\_NODE\_LINKS\_DESC: "If enabled, links to nodes above and below the current level are displayed."  
 STR\_DOTTED\_OUT\_OF\_PLANE\_NODE\_LINKS: "Dashed out-of-plane links"  
 STR\_DOTTED\_OUT\_OF\_PLANE\_NODE\_LINKS\_DESC: "If enabled, links to nodes above and below the current level are drawn as dashed lines if displayed."  
 STR\_SHOW\_LINKS\_ONLY\_FOR\_SELECTED\_NODES: "Show only selected nodes' links"  
 STR\_SHOW\_LINKS\_ONLY\_FOR\_SELECTED\_NODES\_DESC: "If enabled, only the outgoing links from the currently selected nodes are displayed instead of all links."  
 STR\_SHOW\_OUT\_OF\_PLANE\_OFFSET\_CURSOR: "Show offset to out-of-plane nodes"  
 STR\_SHOW\_OUT\_OF\_PLANE\_OFFSET\_CURSOR\_DESC: "If enabled, draw a marker from the current z-level up or down to nodes above or below the current z-level to show where they are in the XY plane and how far from the current level they are. Not recommended with 'Show nodes outside current level' enabled."

Map Editor Save As Window:  
 STR\_MAP\_EDITOR\_SAVEAS: "SAVE MAP AS"

New Map Menu:  
 STR\_SET\_MAP\_SIZES: "SET MAP SIZE"  
 STR\_MAP\_SIZE\_X: "Map Width (x):"  
 STR\_MAP\_SIZE\_Y: "Map Length (y):"  
 STR\_MAP\_SIZE\_Z: "Map Height (z):"  
 STR\_ENTER\_MAP\_NAME: "Map Name:"  
 STR\_EMPTY\_MAP\_NAME: "Enter Name Here"

Map and Route Editor Interfaces:  
 STR\_MAP\_EDITOR\_NODES\_OVER\_LIMIT: "Highlighted nodes are over the ID limit and won't be saved."  
 STR\_MAP\_EDITOR\_SAVED\_SUCCESSFULLY: "Map file saved successfully."  
 STR\_MAP\_EDITOR\_SAVED\_NODES\_OVER\_LIMIT: "Map file saved, highlighted nodes over the ID limit not saved."  
 STR\_DEBUG\_MAP\_EDITOR: "Selected Tile Mode: {0}{NEWLINE}Selected Tile Part: {1}{NEWLINE}Cursor Position: {2}"  
 STR\_DEBUG\_PASTE: "PASTE TILES"  
 STR\_DEBUG\_CLEAR: "CLEAR TILES"  
 STR\_DEBUG\_PLACE: "PLACE TILES"  
 STR\_DEBUG\_O\_FLOOR: "FLOOR"  
 STR\_DEBUG\_O\_WESTWALL: "WEST WALL"  
 STR\_DEBUG\_O\_NORTHWALL: "NORTH WALL"  
 STR\_DEBUG\_O\_OBJECT: "OBJECT"  
 STR\_DEBUG\_O\_MAX: "NONE"  
 STR\_DEBUG\_MAP\_EDITOR\_NODE: "Selected Node Mode: {0}{NEWLINE}{1}: {2}{NEWLINE}{3}: {4}{NEWLINE}Number of Active Nodes: {5}"  
 STR\_DEBUG\_NODES\_PASTE: "PASTE NODES"  
 STR\_DEBUG\_NODES\_SELECT: "CREATE/SELECT"  
 STR\_DEBUG\_NODES\_MOVE: "MOVE SELECTED"  
 STR\_DEBUG\_NODES\_ONEWAYCONNECT: "LINK ONEWAY"  
 STR\_DEBUG\_NODES\_TWOWAYCONNECT: "LINK TWOWAY"  
 STR\_DEBUG\_NODES\_DELETE: "DELETE"  
 STR\_DEBUG\_NODES\_ONEWAYDELETE: "UNLINK ONEWAY"  
 STR\_DEBUG\_NODES\_TWOWAYDELETE: "UNLINK TWOWAY"  
 STR\_DEBUG\_NODES\_SELECTED\_NODE: "Selected Node Position"  
 STR\_DEBUG\_NODES\_SELECTED\_NODES: "Cursor Position"  
 STR\_DEBUG\_NODES\_SELECTED\_ID: "Selected Node ID"  
 STR\_DEBUG\_NODES\_NUMBER\_SELECTED: "Number of Selected Nodes"  
 STR\_TOOLTIP\_SAVE\_MAP: "Save Map"

STR\_TOOLTIP\_LOAD\_MAP: "Load Map"  
 STR\_TOOLTIP\_UNDO: "Undo {0}/{1}"  
 STR\_TOOLTIP\_REDO: "Redo {0}/{1}"  
 STR\_TOOLTIP\_FILL: "Fill Tile/Place Object Mode"  
 STR\_TOOLTIP\_CLEAR: "Clear Tile/Remove Object Mode"  
 STR\_TOOLTIP\_CUT: "Cut Selected Tiles"  
 STR\_TOOLTIP\_COPY: "Copy Selected Tiles"  
 STR\_TOOLTIP\_PASTE: "Paste Copied/Cut Tiles"  
 STR\_TOOLTIP\_TILE\_SELECTION: "Select Tile Object"  
 STR\_TOOLTIP\_TILE\_GROUND: "Place Tiles on Ground"  
 STR\_TOOLTIP\_TILE\_WESTWALL: "Place Tiles on West Wall"  
 STR\_TOOLTIP\_TILE\_NORTHWALL: "Place Tiles on North Wall"  
 STR\_TOOLTIP\_TILE\_OBJECT: "Place Tiles as Object"  
 STR\_TOOLTIP\_FIND\_TILES: "Find and Replace Tiles"  
 STR\_TOOLTIP\_SWITCH\_MODES: "Toggle Between Tile and Route Mode"  
 STR\_NODE\_ID: "Node ID: {0}, Position: {1}"  
 STR\_NODE\_TYPE: "Node Type:"  
 STR\_NODE\_RANK: "Node Rank:"  
 STR\_NODE\_FLAG: "Patrol Priority:"  
 STR\_NODE\_PRIORITY: "Spawn Priority:"  
 STR\_NODE\_RESERVED: "Reserved for AI:"  
 STR\_NODE\_LINKS: "Links:"  
 STR\_NODE\_TYPE\_ANY: "Any Unit"  
 STR\_NODE\_TYPE\_SMALL: "Only Small Units"  
 STR\_NODE\_TYPE\_FLYING: "Any Flying Units"  
 STR\_NODE\_TYPE\_FLYINGSMALL: "Small Flying Units"  
 STR\_NODE\_RANK\_CIVSCOUT: "Civilian/Scout"  
 STR\_NODE\_RANK\_XCOM: "X-Com Unit"  
 STR\_NODE\_RANK\_SOLDIER: "Soldier"  
 STR\_NODE\_RANK\_NAVIGATOR: "Navigator"  
 STR\_NODE\_RANK\_LEADERCOMMANDER: "Leader/Commander"  
 STR\_NODE\_RANK\_ENGINEER: "Engineer"  
 STR\_NODE\_RANK\_TERRORIST0: "Terrorist 0"  
 STR\_NODE\_RANK\_MEDIC: "Medic"  
 STR\_NODE\_RANK\_TERRORIST1: "Terrorist 1"  
 STR\_LINK\_UNUSED: "Unused"  
 STR\_LINK\_NORTH: "Exit N"  
 STR\_LINK\_EAST: "Exit E"  
 STR\_LINK\_SOUTH: "Exit S"  
 STR\_LINK\_WEST: "Exit W"  
 STR\_TOOLTIP\_NODE\_NEW: "Create/Select Nodes and Links Mode"  
 STR\_TOOLTIP\_NODE\_DELETE: "Delete/Remove Nodes and Links Mode"  
 STR\_TOOLTIP\_NODE\_CUT: "Cut Selected Nodes"  
 STR\_TOOLTIP\_NODE\_COPY: "Copy Selected Nodes"  
 STR\_TOOLTIP\_NODE\_PASTE: "Paste Copied/Cut Nodes"  
 STR\_TOOLTIP\_NODE\_SELECT: "Right Click on Node Selects/Deletes It"  
 STR\_TOOLTIP\_NODE\_MOVE: "Right Click on Map Moves Selected Node"  
 STR\_TOOLTIP\_NODE\_ONEWAYCONNECT: "Right Click on Node Creates/Deletes a One-Way  
 Link"  
 STR\_TOOLTIP\_NODE\_TWOWAYCONNECT: "Right Click on Node Creates/Deletes a Two-Way  
 Link"  
 STR\_TOOLTIP\_FIND\_NODES: "Find and Replace Nodes"  
 STR\_TOOLTIP\_NODE\_INFO: "Node Information Panel"  
 STR\_TOOLTIP\_NODE\_LINK: "Node Links Panel"

STR\_TOOLTIP\_NODE\_TYPE: "Node Type - which size/movement type of units use it"  
STR\_TOOLTIP\_NODE\_RANK: "Node Rank - which rank of units spawn here first"  
STR\_TOOLTIP\_NODE\_FLAG: "Patrol Priority - higher number is greater priority"  
STR\_TOOLTIP\_NODE\_PRIORITY: "Spawn Priority - highest spawns first, 0 is no spawn"  
STR\_TOOLTIP\_NODE\_RESERVED: "Reserved - AI shoots this in base defense when = 5"  
STR\_TOOLTIP\_NODE\_LINKS: "Node Links - which nodes are next in patrol routes"  
STR\_TOOLTIP\_NODE\_LINKTYPES: "Link Types - legacy data unused in OXC, ignore"

Find and Replace Tiles Interface:

STR\_FIND\_TILES: "FIND TILES"  
STR\_FIND\_TILES\_WITH: "With:"  
STR\_FIND\_TILES\_IN\_PART: "In Tile Part:"  
STR\_FIND\_TILES\_THEN: "Then:"  
STR\_FIND\_TILES\_BUTTON: "Find"  
STR\_FIND\_TILES\_AND\_REPLACE: "AND REPLACE WITH"  
STR\_REPLACE\_TILES\_BUTTON: "Replace"  
STR\_FIND\_O\_FLOOR: "Floor"  
STR\_FIND\_O\_WESTWALL: "West Wall"  
STR\_FIND\_O\_NORTHWALL: "North Wall"  
STR\_FIND\_O\_OBJECT: "Object"  
STR\_FIND\_O\_MAX: "Any"  
STR\_FIND\_MATCH\_SEARCH: "Found Tile Part"  
STR\_FIND\_TILES\_ANYWHERE: "Anywhere"  
STR\_FIND\_TILES\_IN\_SELECTION: "Inside Selection"  
STR\_FIND\_TILES\_OUTSIDE\_SELECTION: "Outside Selection"  
STR\_CREATE\_NEW\_SELECTION: "Create New Selection"  
STR\_ADD\_TO\_SELECTION: "Add to Selection"  
STR\_REMOVE\_FROM\_SELECTION: "Remove from Selection"  
STR\_REPLACE\_FROM\_MCD: "Selected Tile from MCD"  
STR\_REPLACE\_FROM\_CLIPBOARD: "First Tile in Clipboard"  
STR\_REPLACE\_WITHOUT\_CLEARING: "Don't Clear First"  
STR\_REPLACE\_WITH\_CLEARING: "Clear Tile First"

Find and Replace Nodes Interface:

STR\_FIND\_NODES: "FIND NODES"  
STR\_FIND\_NODES\_PARAMETER: "With:"  
STR\_FIND\_NODES\_WITH\_VALUE: "Equal to:"  
STR\_FIND\_NODES\_THEN: "Then:"  
STR\_FIND\_NODES\_BUTTON: "Find"  
STR\_FIND\_NODES\_AND\_REPLACE: "AND SET THEIR"  
STR\_REPLACE\_NODES\_VALUE: "Equal to:"  
STR\_REPLACE\_NODES\_BUTTON: "Set"  
STR\_FIND\_NODE\_TYPE: "Unit Type"  
STR\_FIND\_NODE\_RANK: "Unit Rank"  
STR\_FIND\_NODE\_PATROL: "Patrol Priority"  
STR\_FIND\_NODE\_SPAWN: "Spawn Priority"  
STR\_FIND\_NODE\_TARGET: "Reserved for AI"  
STR\_FIND\_NODE\_LINKS: "A Node Link"  
STR\_REPLACE\_NODE\_LINKS: "Found Node Link"  
STR\_FIND\_NODES\_ANYWHERE: "Anywhere"  
STR\_FIND\_NODES\_IN\_SELECTION: "Inside Selection"  
STR\_FIND\_NODES\_OUTSIDE\_SELECTION: "Outside Selection"