Unleashing Aurora GT

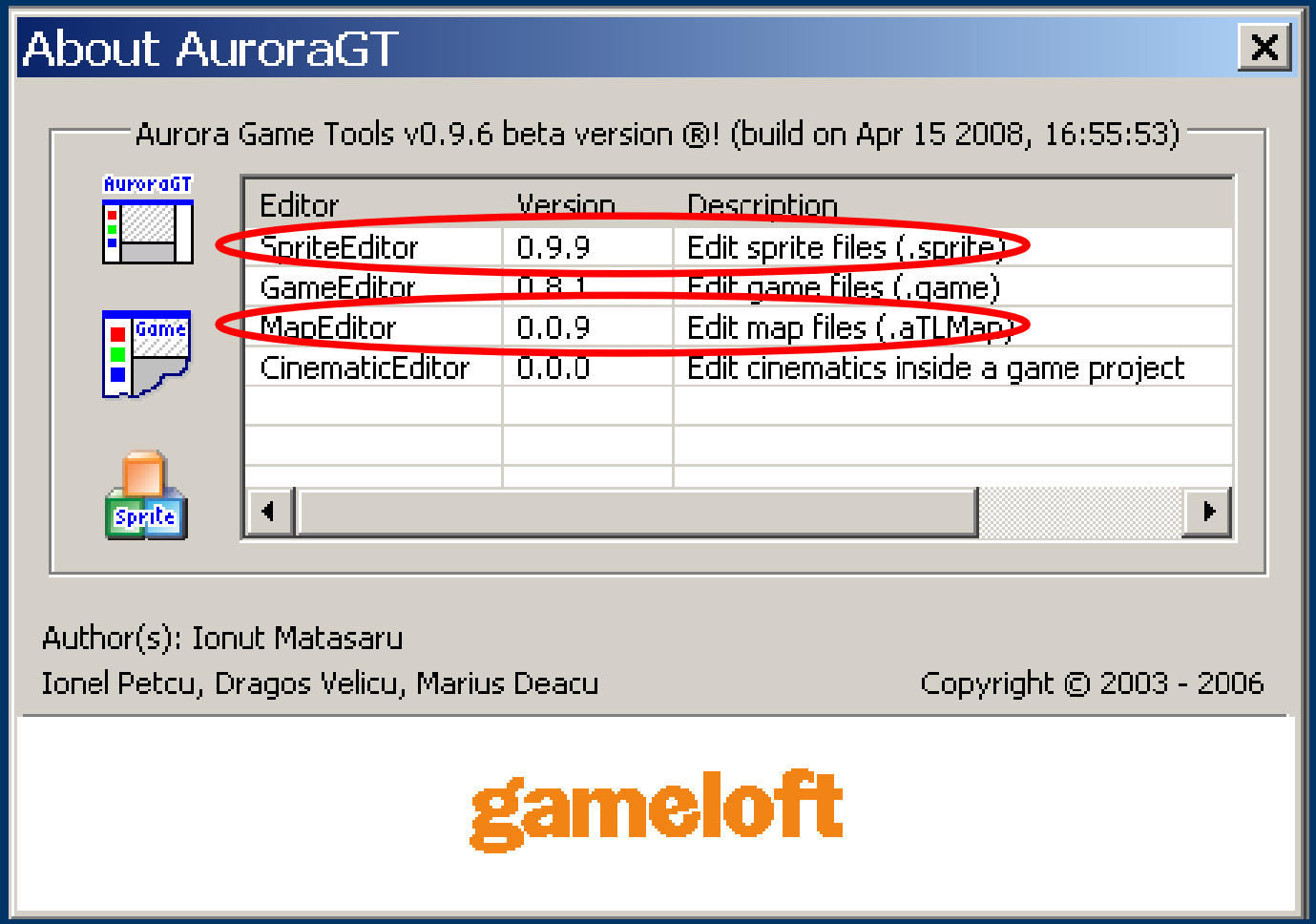
PART I – SpriteEditor & MapEditor: fundamentals

gameloft

Version

25/01/08	Diego.Mercado@gameloft.com	0.0.1	Initial draft
27/02/08	Diego.Mercado@gameloft.com	0.0.2	Added Tileset editor
29/02/08	Diego.Mercado@gameloft.com	0.0.3	Modified gpl2act args, compound graphic & minor changes
10/03/08	Diego.Mercado@gameloft.com	1.0.0	Reorder some slides & minor changes
10/03/08	Diego.Mercado@gameloft.com	1.0.1	Added mask subdivision, MapEditor including isometric maps (r1006) & some optimizations
17/04/08	Diego.Mercado@gameloft.com	1.0.2	Added preview of an animation, more flags, support for non-indexed images and truecolor bmp & updated to r1093: support for more types (triangles & arcs), new bsprite's chunks, and some minor changes
22/04/08	Diego.Mercado@gameloft.com	1.0.3	Added Content & Contact Us pages
02/06/08	Diego.Mercado@gameloft.com	1.0.4	Fixed some bugs at the exporting sprite section
10/09/08	gaspar.deelias@gameloft.com	1.0.5	Added a conclusion.Splitted Workshop.

Reference Version[1]



[1] https://terminus.mdc.gameloft.org/vc/tools/AuroraGT (r1093)

Content

AuroraGT

- **AuroraGT** (Aurora Game Tools)
  - Is:
    - A sprite editor
    - A game designing tool
  - It has 3 main different versions:
    - Normal (`AuroraGT.exe`)
    - Home-Edition (`AuroraGT_HE.exe`)
    - Unicode-Edition (`AuroraGT_unicode.exe`)
  - The extensions of its files are:
    - Sprites: `*.sprite`
    - Games: `*.game`
    - Maps: `*.aTLMap`

Sprite

- Sprite
  - "*An independent graphic object controlled by its own bit plane (area of memory)*"
  - "*Is a two-dimensional/three-dimensional image or animation that is integrated into a larger scene*" (Wikipedia)

(1) Computer Desktop Encyclopedia
(2) Wikipedia

AuroraGT - [tileset_layer0.sprite]

File Edit View Tools Window Help

Tilesets

Insert | Clone | Delete | Up | Down | Top | Bottom

Index	ID	Desc
0	7000	
new...		

TILESETS

id=0x7000 desc="" Apply

Tileset Properties

ID: 0x7000

Name:

Description: NULL

Tile Type: MODULE

Tile Size: 11 x 11 [pixels]

Palette Size: 16 x 15 [tiles]

Subdivisions: 1 x 1 [subtiles]

PROPERTIES

Tileset

Info Tiles Mask

Grid Tiles Grid Mask Edit

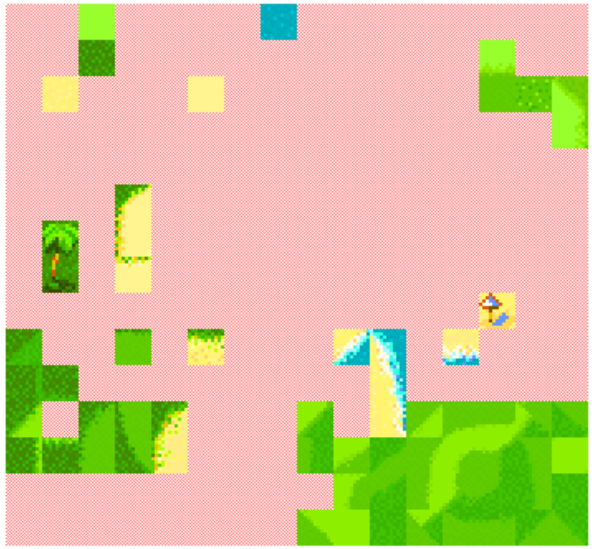
Top Tiles Indices

Transp

Setup... tileset

Zoom 200%

PREVEW



Modules

0 (3EA) 1 (3EF) 2 (3FA) 3 (405) 4 (409) 8 (417) 9 (427) 10 (43B) 11 (449

MODULES AND COLLISIONS

Module Editor | Frame Editor | Animation Editor | Module Mapping Editor | Tileset Editor

For Help, press F1

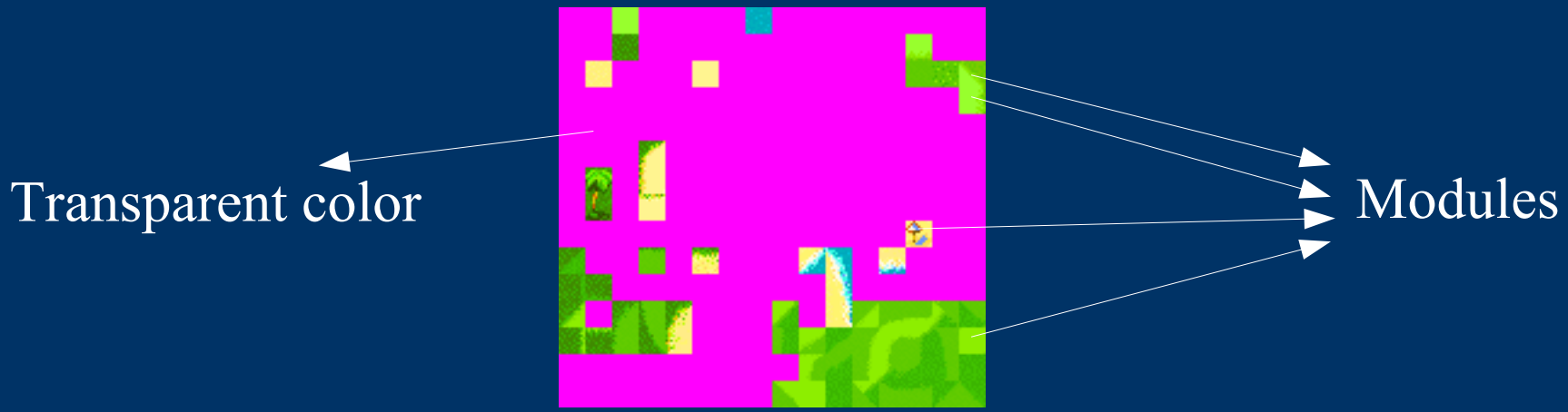
287, 47 NUM

Sprite
Tileset editor

- "*A tile set is collection of smaller images called tiles (typically of uniform size) which have been combined into a single larger image*" (Wikipedia)

Sprite
Tileset editor

- This tiles are combined to get a larger image (in this case, the grass, sand and water are combined to get a golf hole)



Sprite
Tileset editor

- A tile is compound by:
  - Tile size: the size of each title
    - Most of the modules has an uniform size
  - Palette size: the palette that is applied to the image
    - Could be interpreted as the number of modules/anims/frames at width and height
  - Subdivision: divides each tile in subtiles
    - You apply each mask to each subdivision

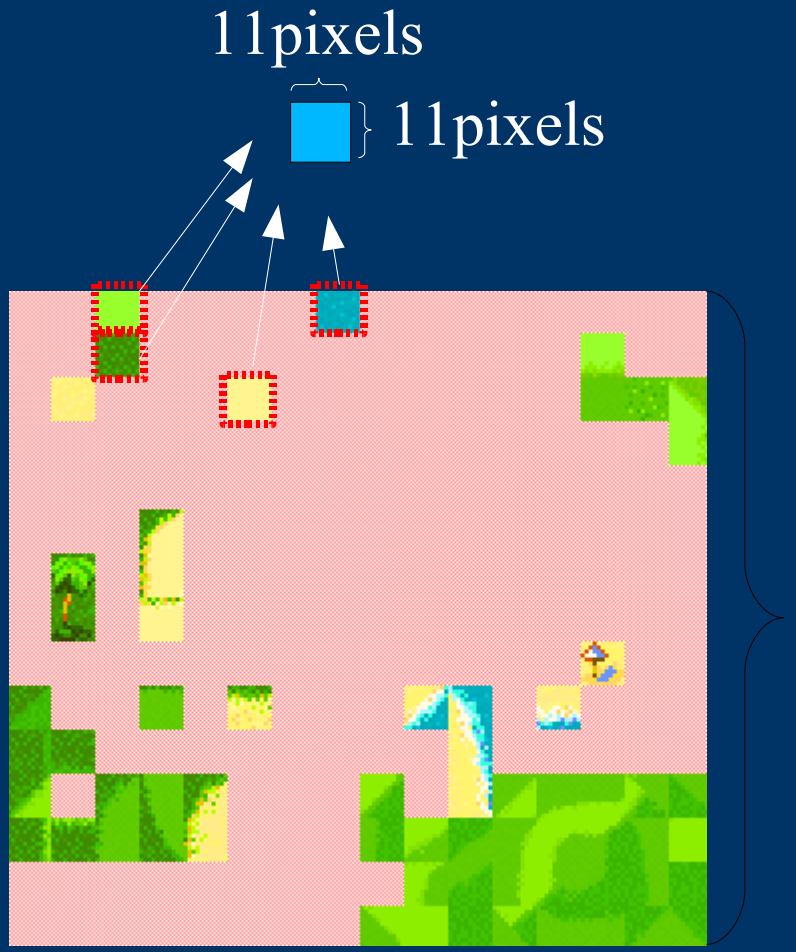
Sprite
Tileset editor

- Tile size = 11 x 11

Modules

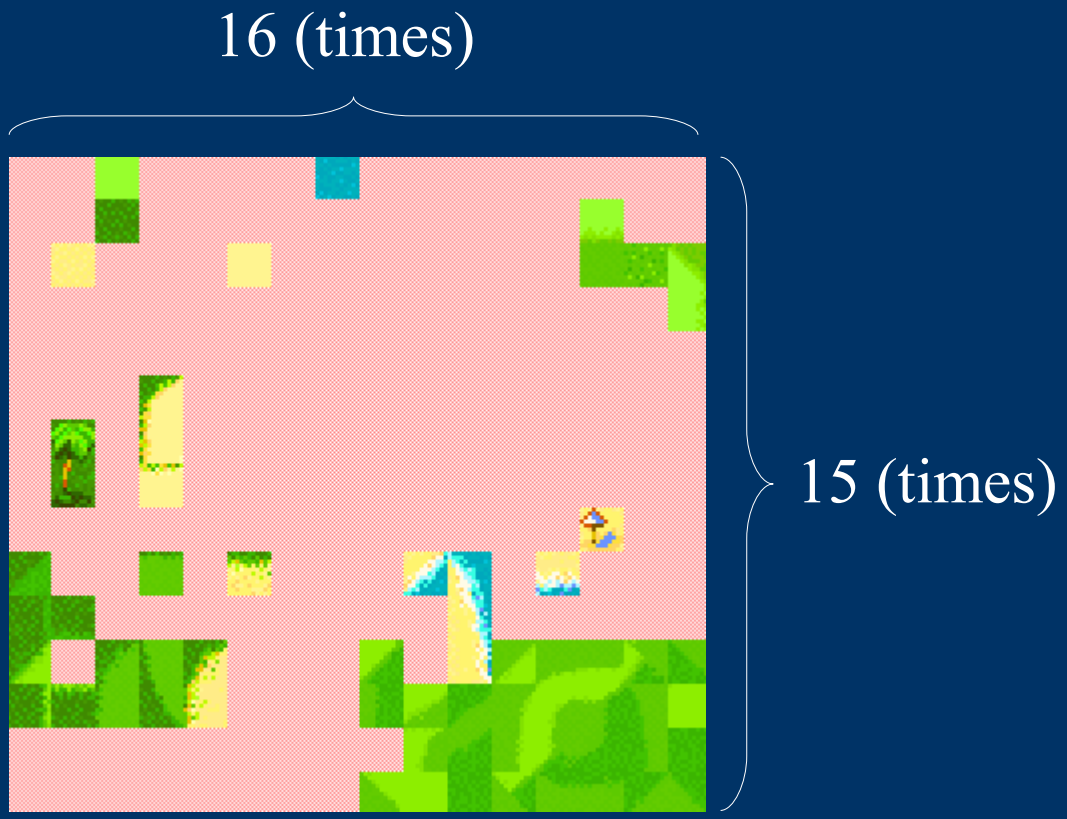
Insert | Clone | Delete | Up | Down | Top | Bottom

Index	ID	Type	Image	X	Y	Width	Height	Desc
0	03EA	IMAGE	0	22	0	11	11	
1	03EF	IMAGE	0	77	0	11	11	
2	03FA	IMAGE	0	22	11	11	11	
3	0405	IMAGE	0	143	11	11	11	
4	0409	IMAGE	0	11	22	11	11	
5	040D	IMAGE	0	55	22	11	11	
6	0415	IMAGE	0	143	22	11	11	
7	0416	IMAGE	0	154	22	11	11	
8	0417	IMAGE	0	165	22	11	11	
9	0427	IMAGE	0	165	33	11	11	
10	043B	IMAGE	0	33	55	11	11	



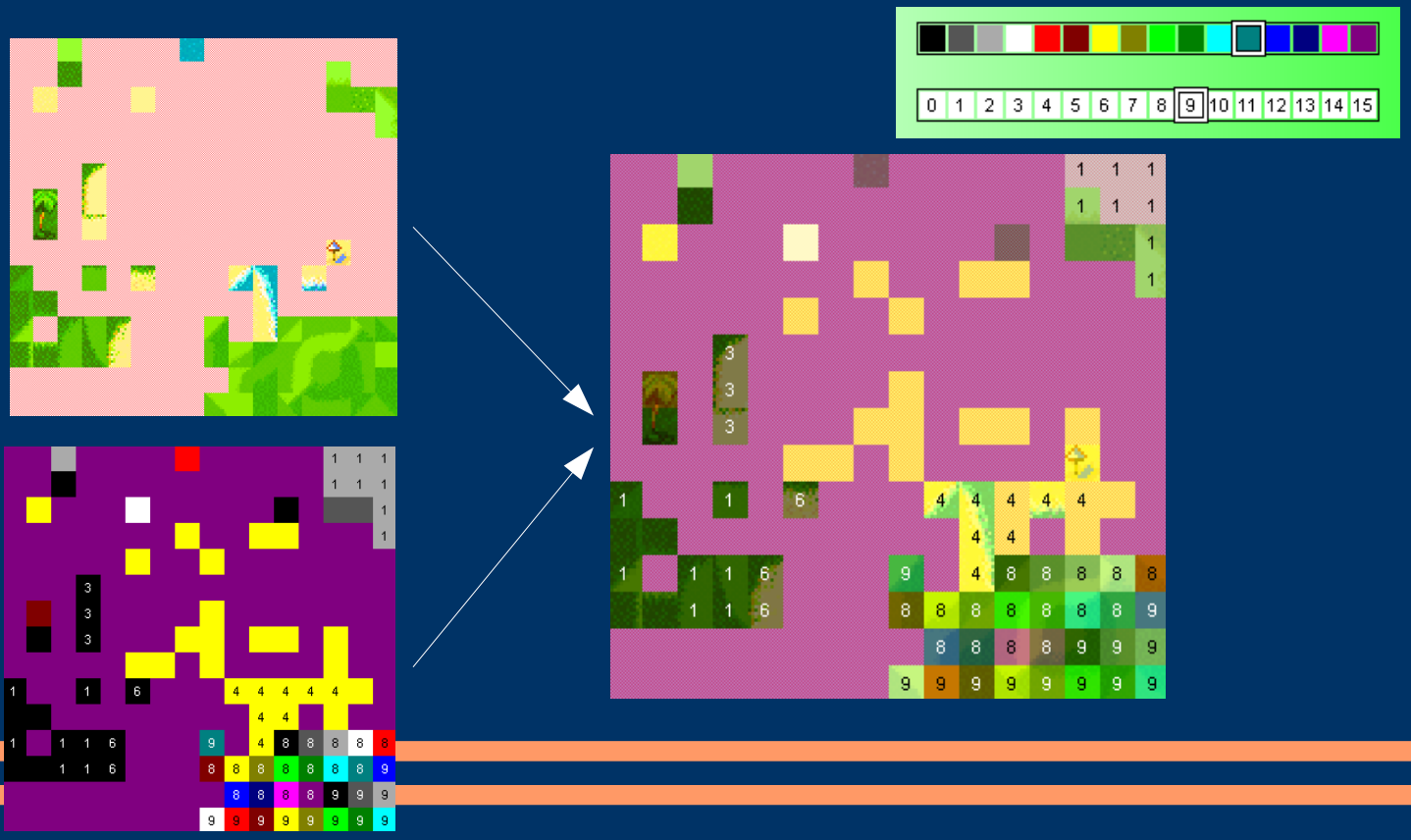
Sprite
Tileset editor

- Palette size = 16 x 15



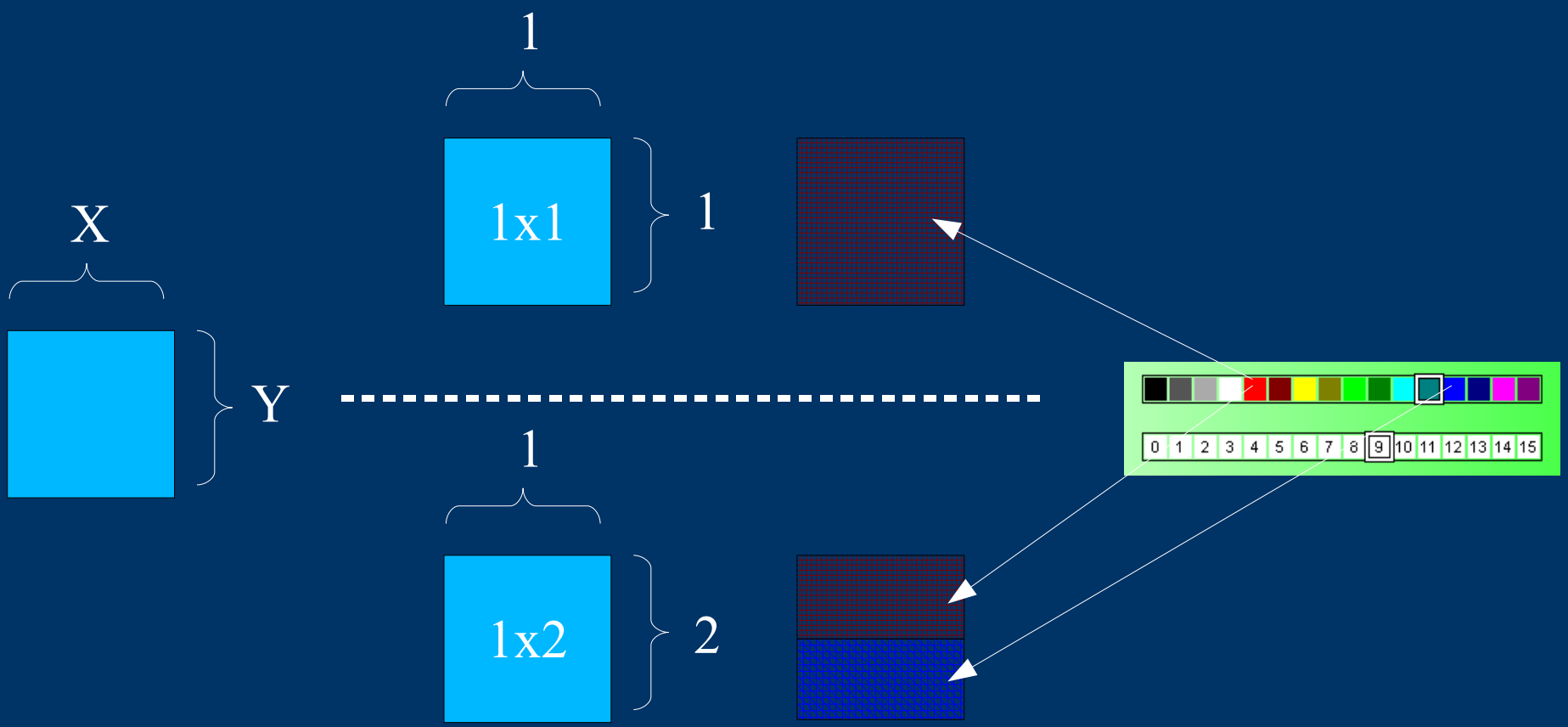
Sprite
Tileset editor

- Then, through the palette, you can define a mask that match a n module / frame / anim (depending on the tileset type)



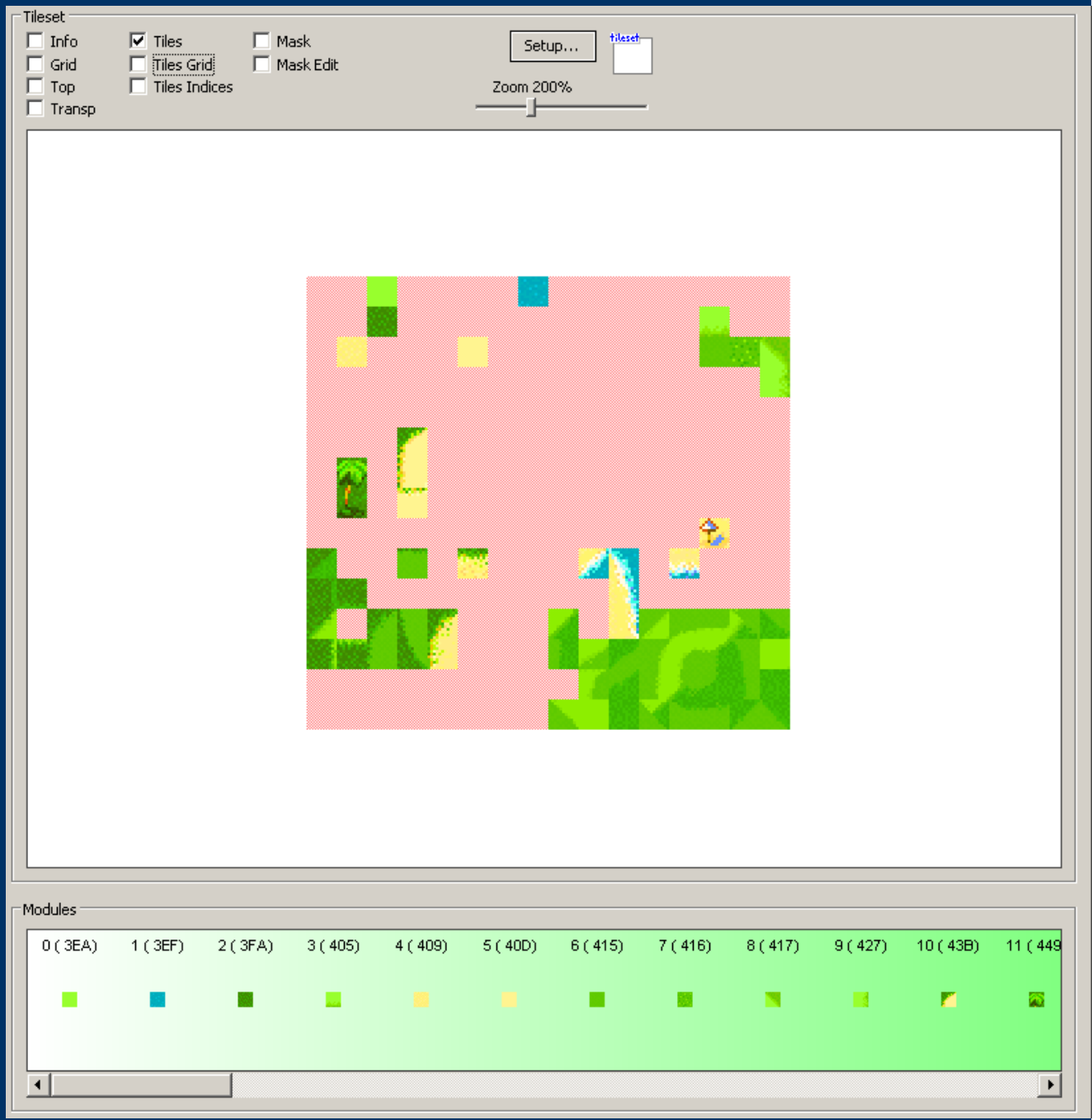
Sprite
Tileset editor

- Mask subdivision = 1 x 1
  - In this case we apply a mask to an entire module (1st example)



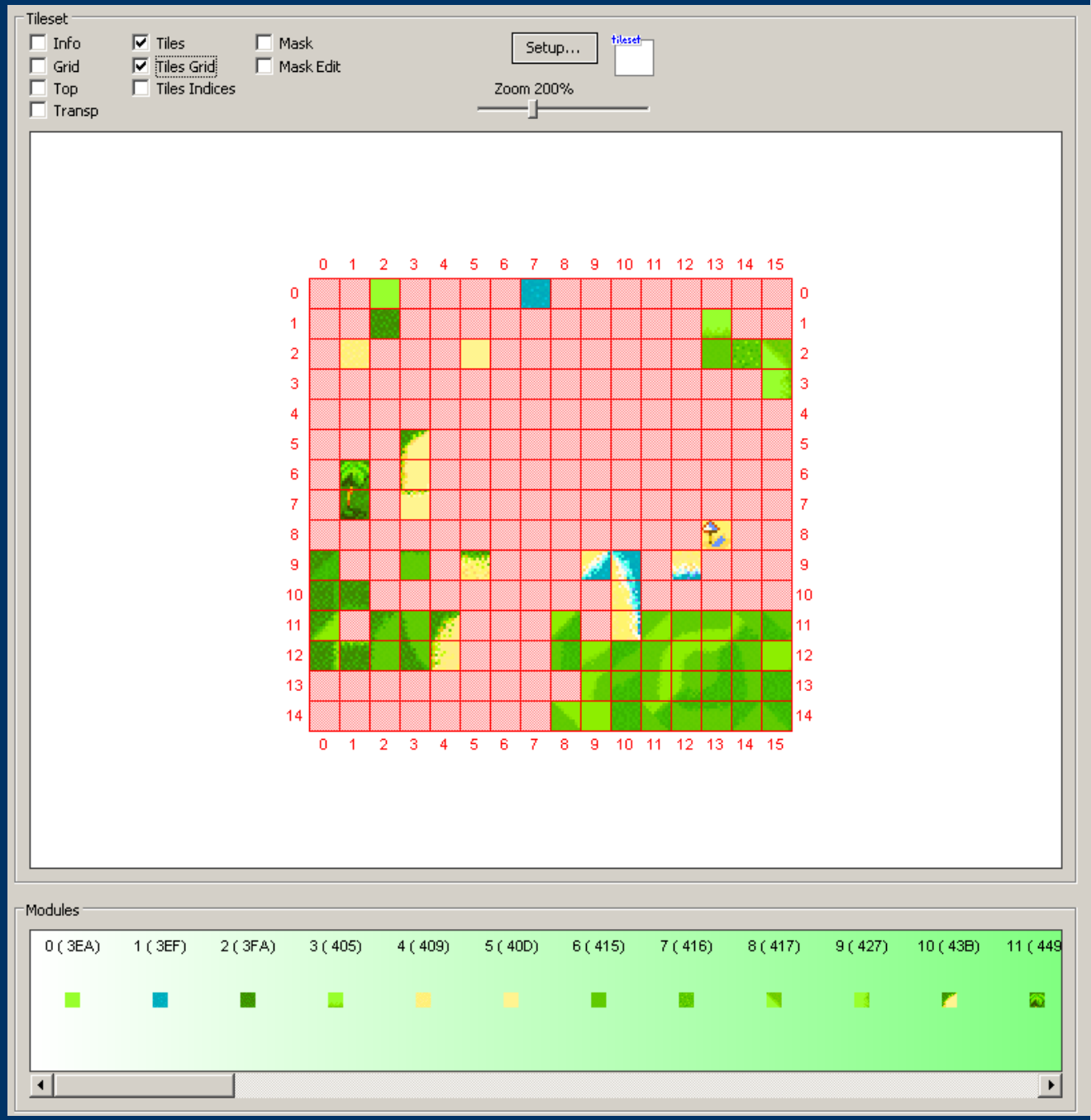
Sprite
Tileset editor

- Tiles: the actual tile



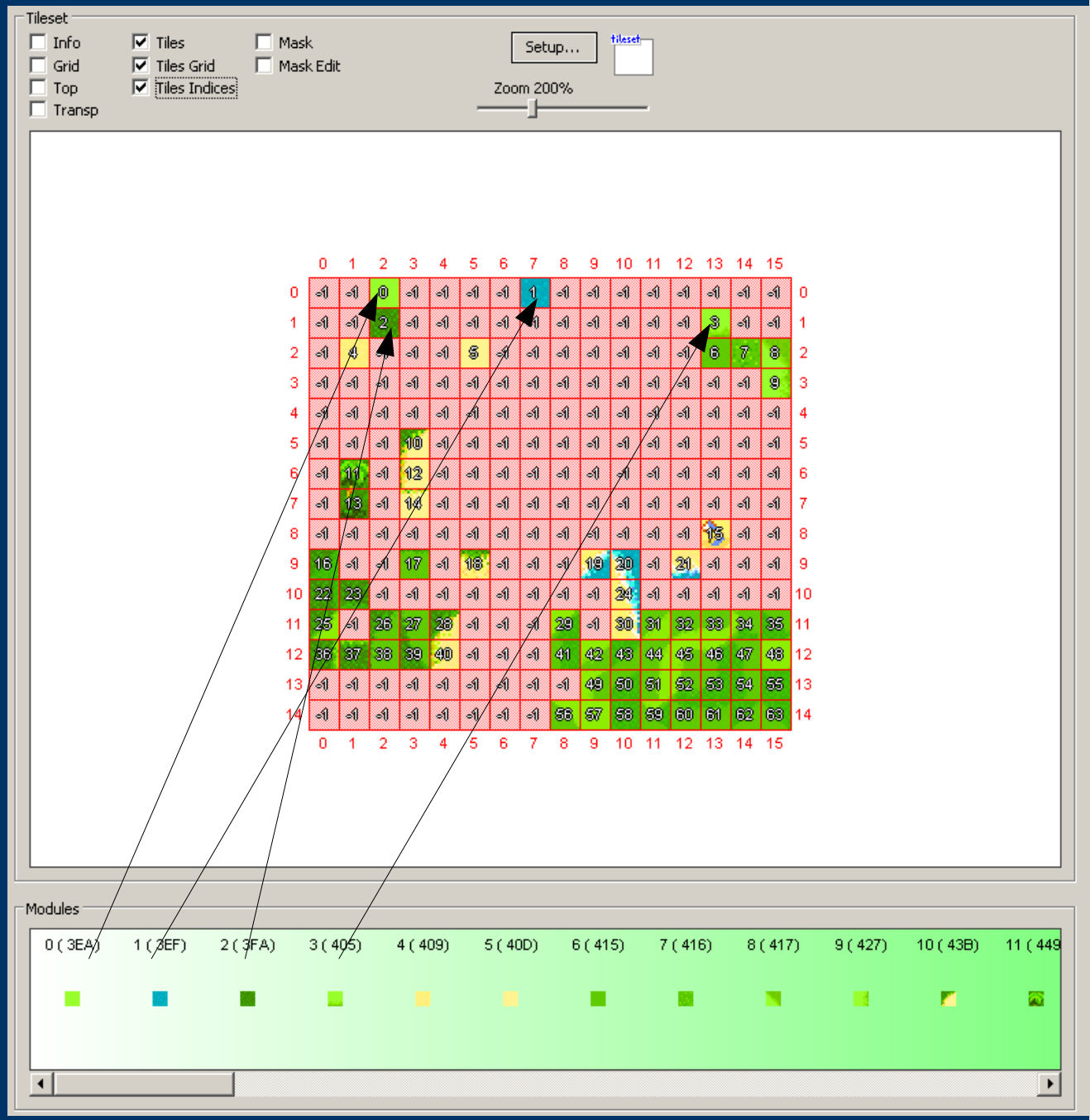
Sprite
Tileset editor

- Tiles grid: like the naval battle :)



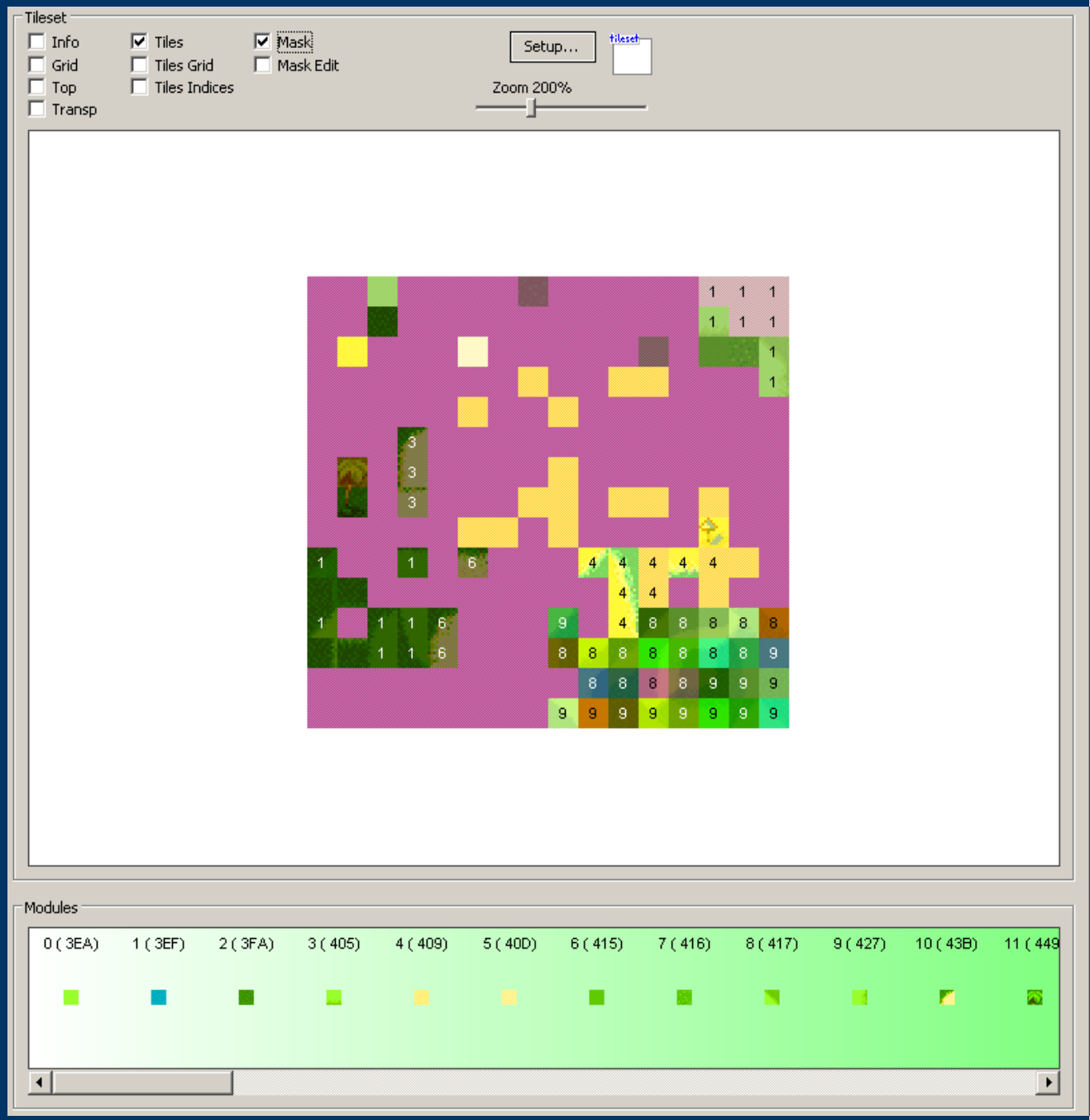
Sprite
Tileset editor

- Tiles indices: in this case the index of each module



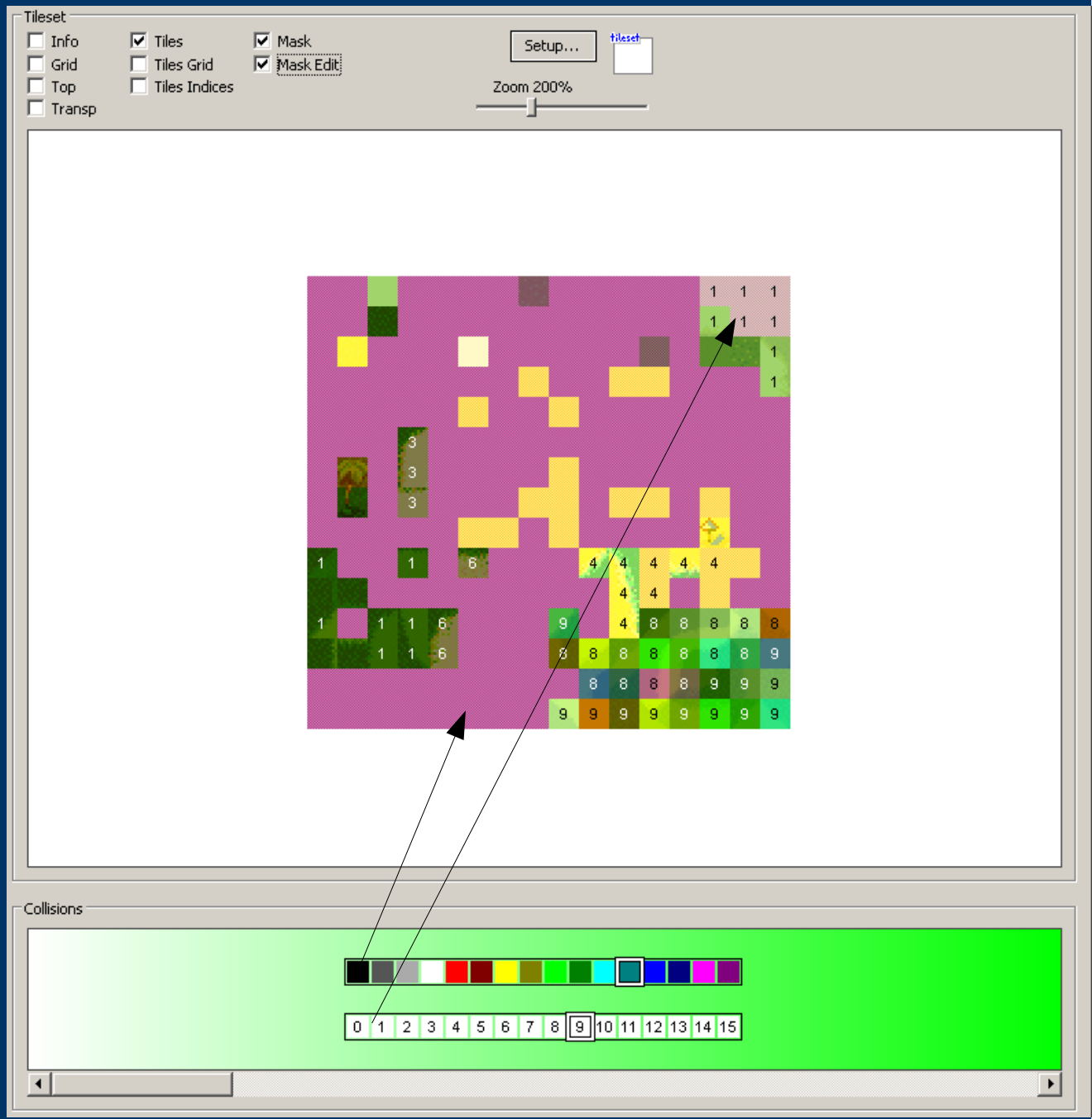
Sprite
Tileset editor

- Mask: the color mask



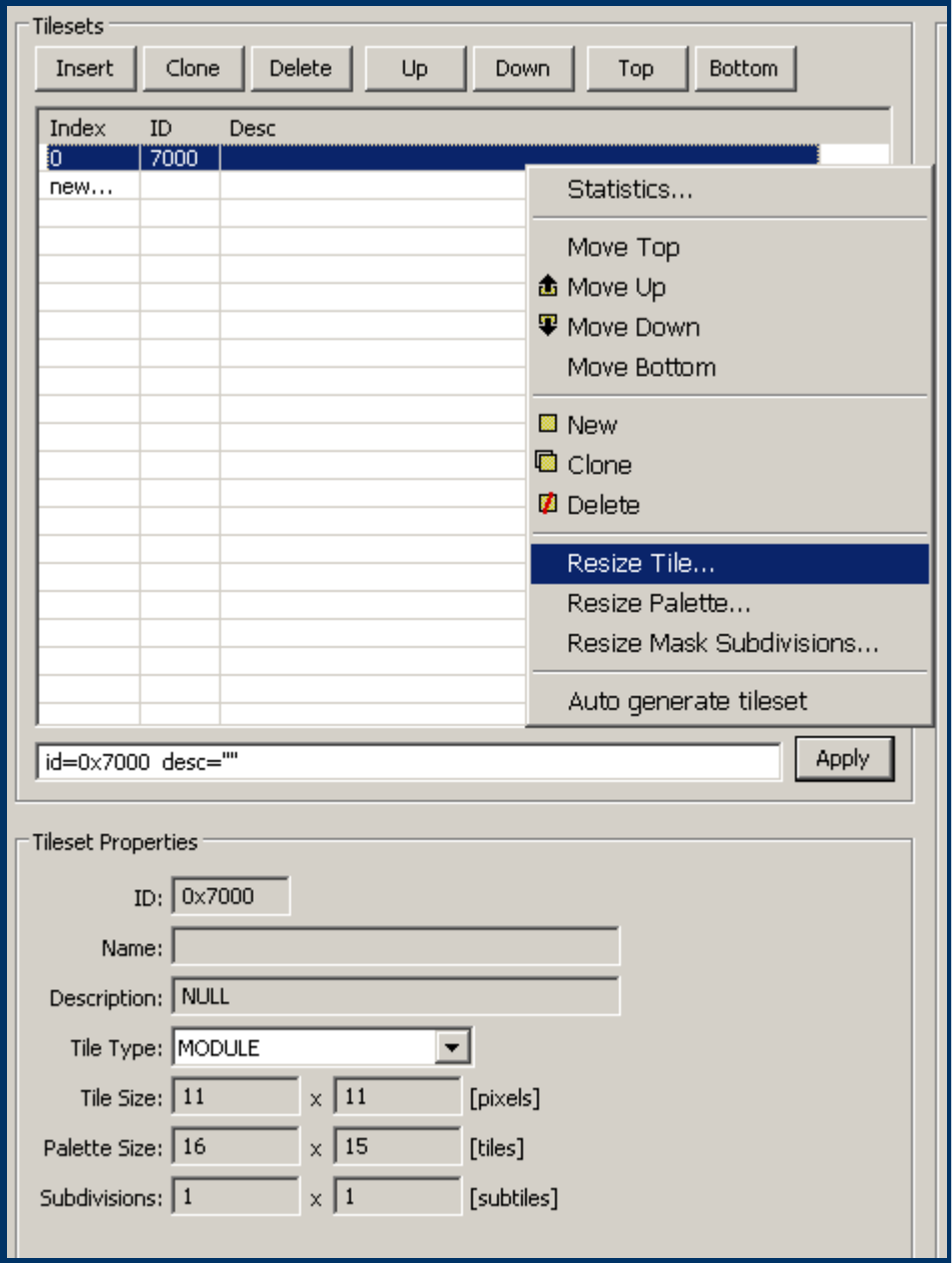
Sprite
Tileset editor

- Mask edit: you can:
  - add a mask using the pencil tool (✎)
  - get the exact mask with the dropper tool (✎)
  - remove any mask with the eraser tool (✎)



Sprite
Tileset editor

- Creating a Tile:
  - Press “Insert”
  - Select the Tile Type
    - “MODULE”, “FRAME” or “ANIM”
  - Then
    - Set “Resize Tile...”
    - Set “Resize Palette...”
    - Draw each module on the grid and set the proper mask



Sprite
Tileset editor

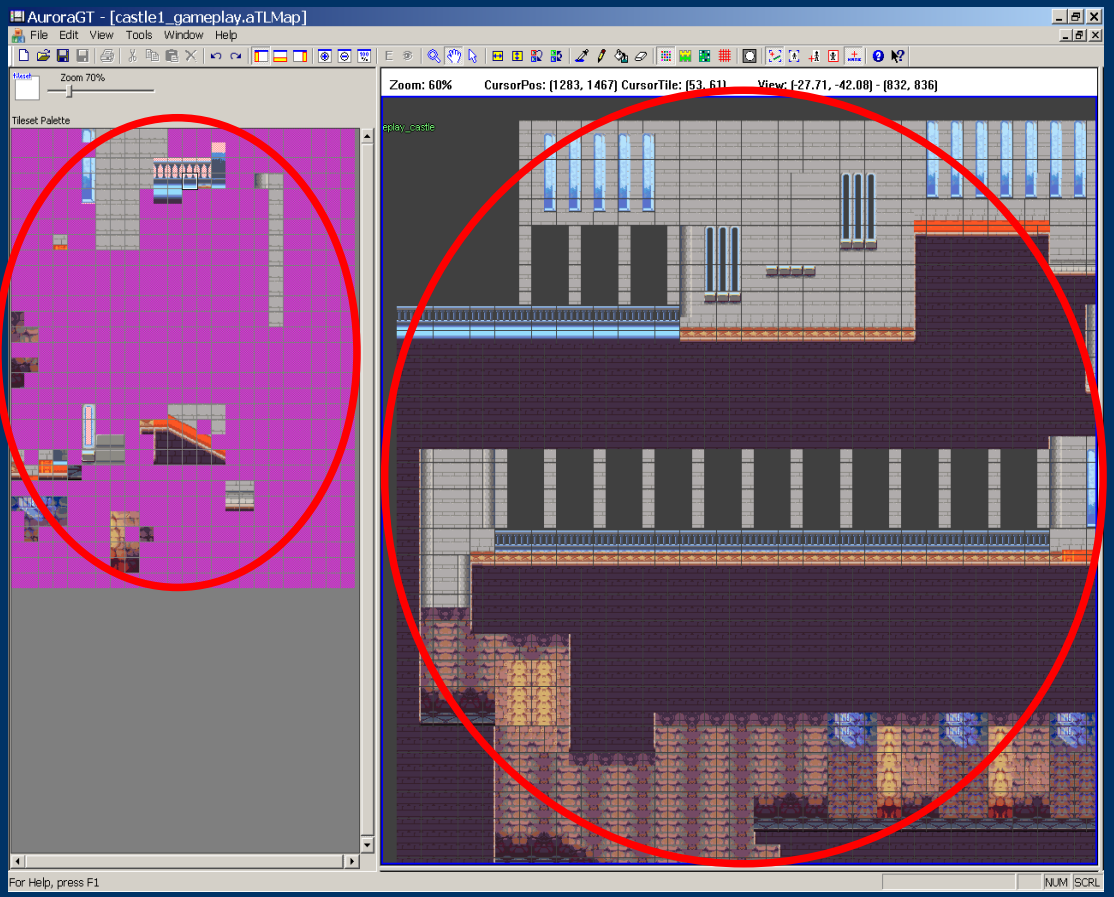
- There is an important TIP that save some time:
  1. Set a big palette size
  2. Select “Auto generate tileset”
  3. Resize the palette with the proper size
  4. Set the mask for each tile

MAPS - TILES

Sprite
Map editor

- Finally, the tileset is used to integrate a large scene (*aTLMap*):

TILESET

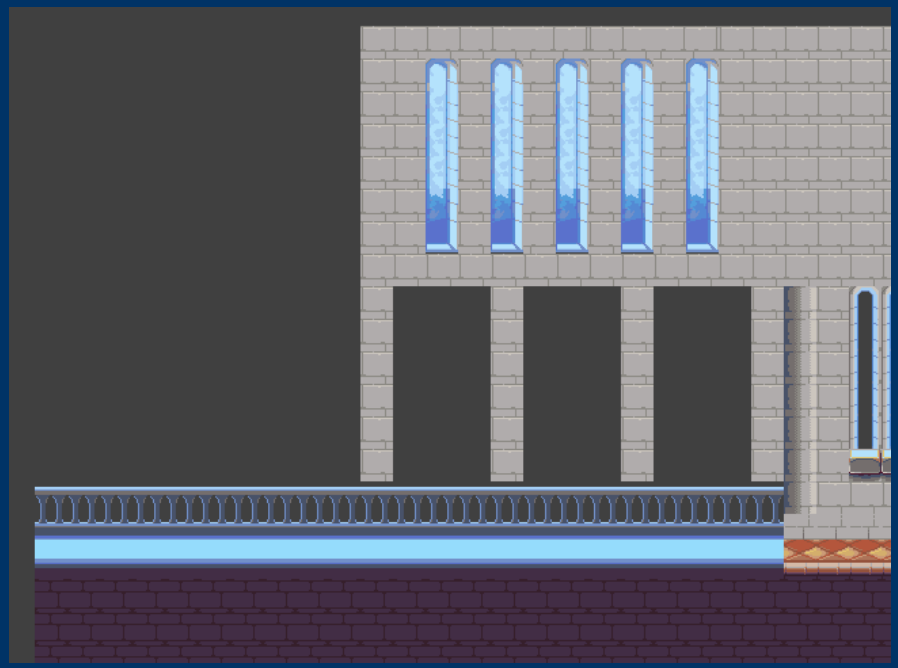


aTLMap

Sprite
Map editor

- There are 2 kinds of maps:

Normal 2D maps

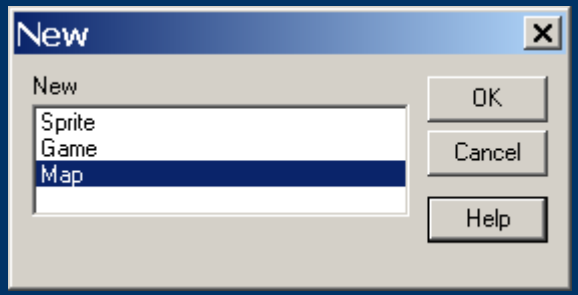


Isometric maps

Sprite

Map editor – Normal 2D map

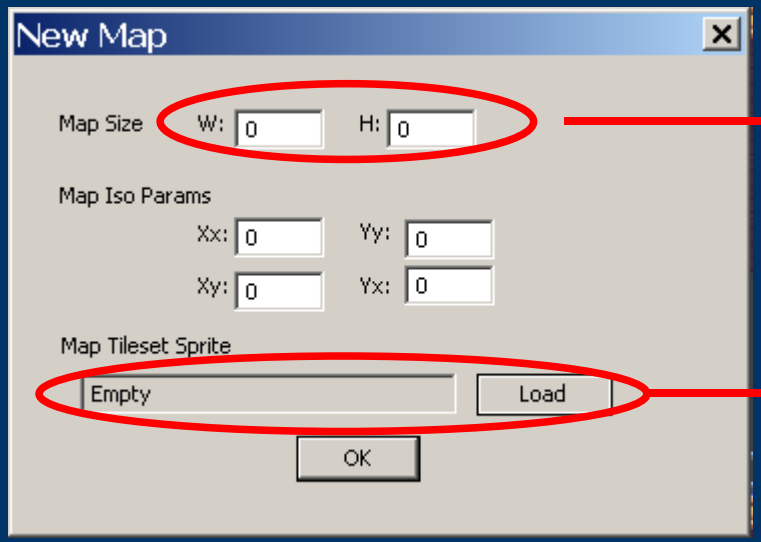
- To create a normal 2D map:
  - File -> New -> Map



Sprite

Map editor – Normal 2D map

- Then, we set:



the number of tiles at width & height

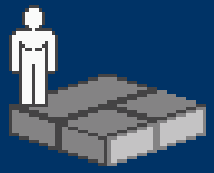
the sprite that is used as tileset

NOTE: leave the Map ISO Params with the default values (0)

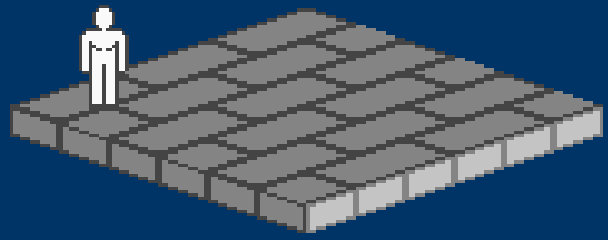
Sprite

Tileset editor – Isometry

- *"Isometric tiles are diamond shaped pictures that can be combined with other isometric tiles to form a seamless landscape for tile-based games. Due to its diamond shape, the isometric tile gives the illusion of depth."*[1]



A single isometric tile

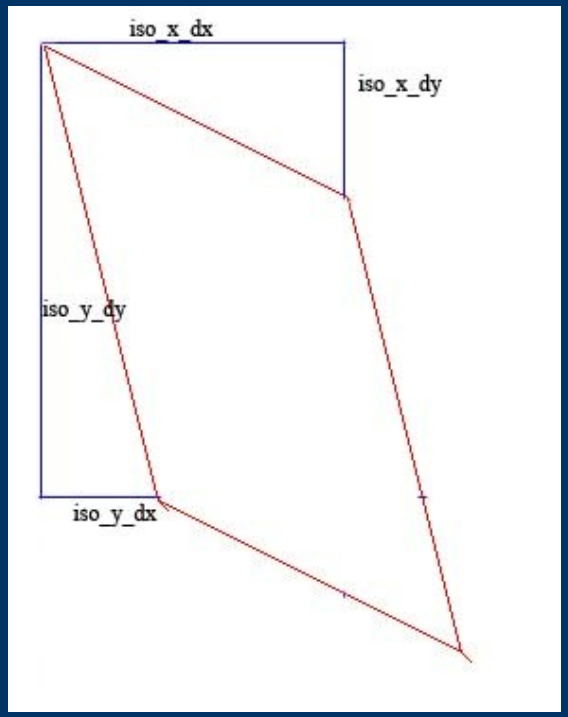


A map using isometric tiles

[1] http://www.gamedev.net/reference/articles/article738.asp

Sprite

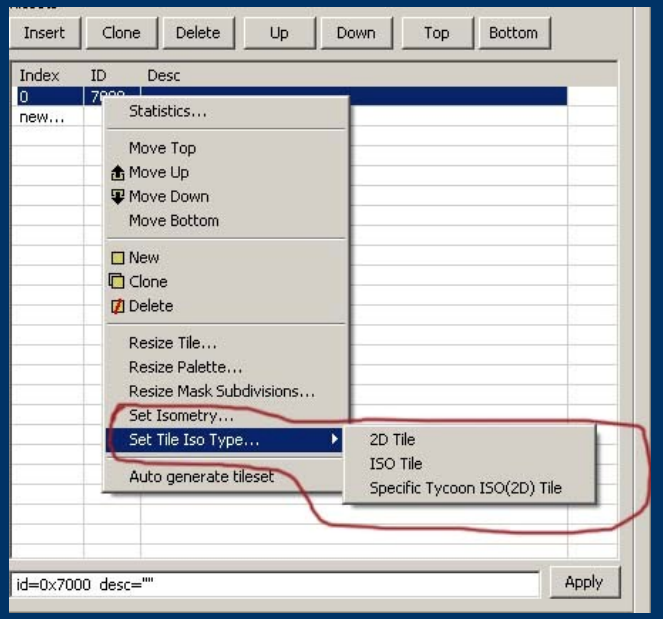
Tileset editor – Isometry




```
Xx <-> iso_x_dx
Xy <-> iso_x_dy
Yx <-> iso_y_dx
Yy <-> iso_y_dy
```

Sprite

Tileset editor – Isometry

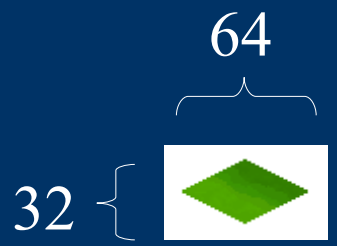


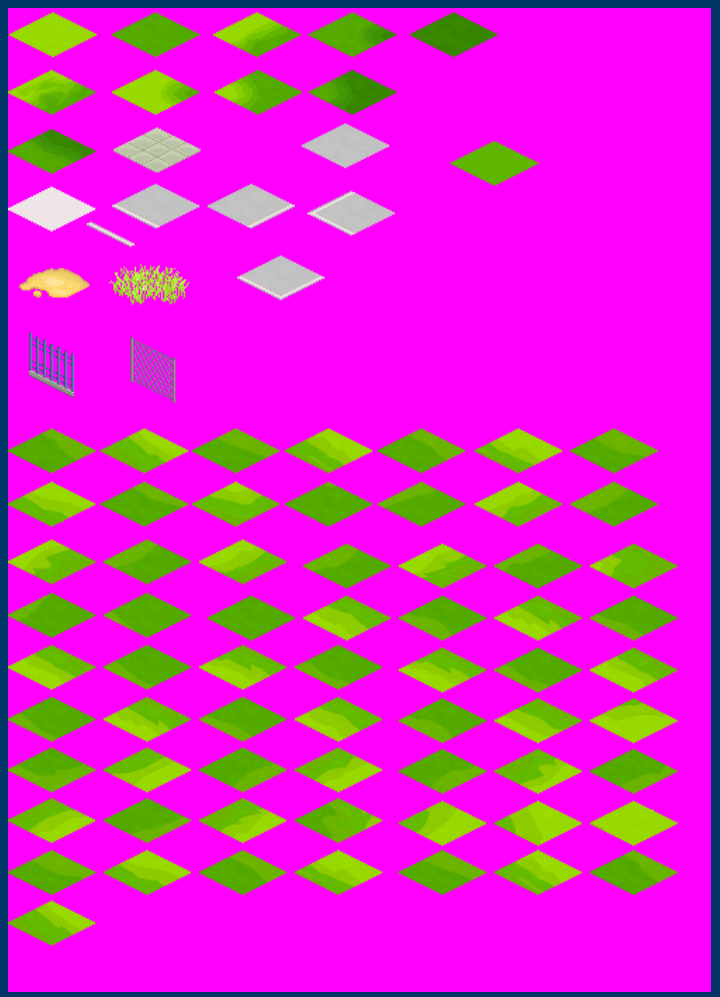
- The are three ISO types of tile:
  - 2D Tileset: basically no isometry,
    - Xx = tile_width
    - Yy = tile_height.
  - ISO Tileset: the tiles in the tileset are displayed using the isometric steps
  - ISO 2D Tileset: a particular view mode was added for Animal Tycoon that displays the tiles of an isometric tileset in a 2D more like view.

Sprite

Tileset editor – Isometry – Animal Park example

- In animal park we have these tiles:

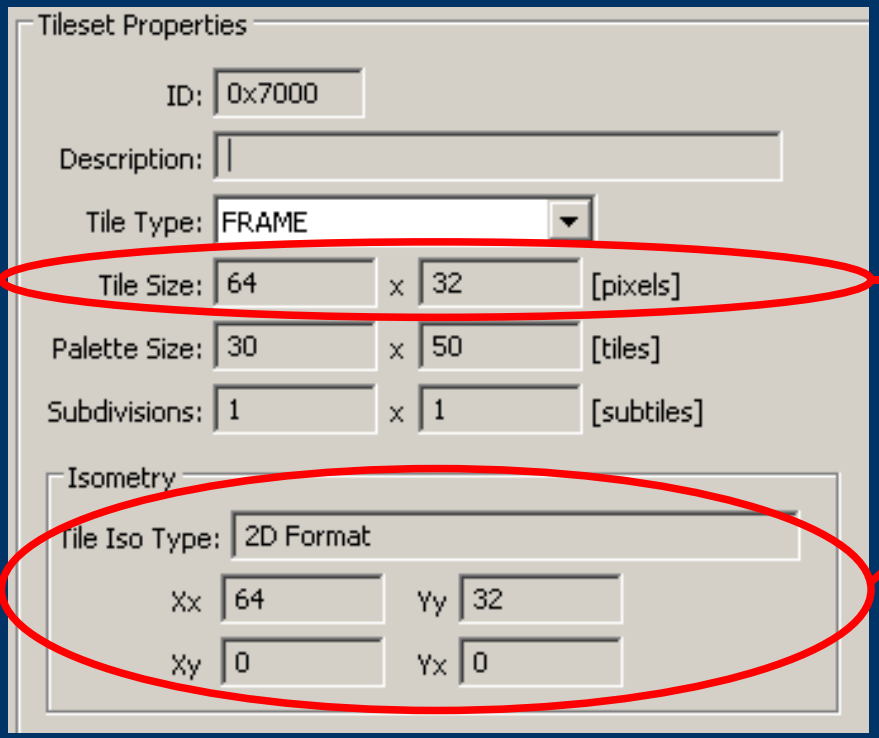




Sprite

Tileset editor – Isometry – Animal Park example

- Then, we create a tileset with the following properties:



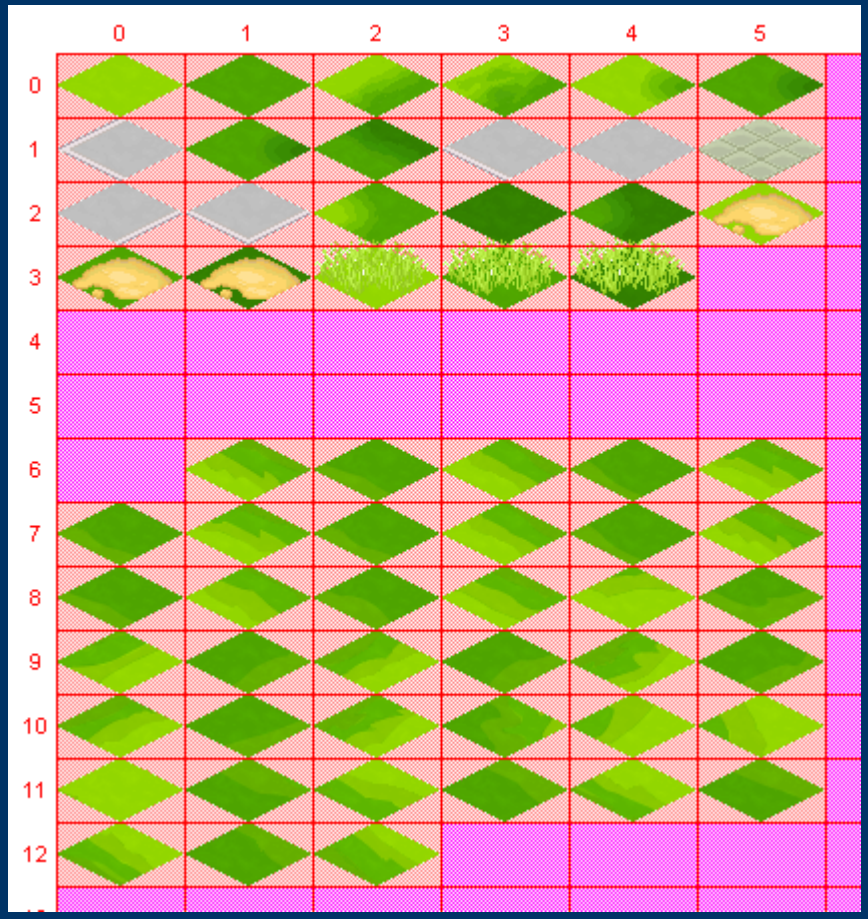
notice that we're using a regular 2D Tileset with basically no isometry

```
Xx = Tile width
Yy = Tile height
```

Sprite

Tileset editor – Isometry – Animal Park example

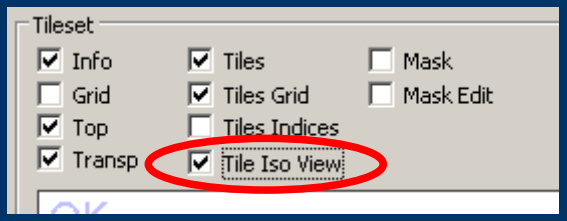
- So, we would have a tileset like this:



Sprite

Tileset editor – Isometry – Animal Park example

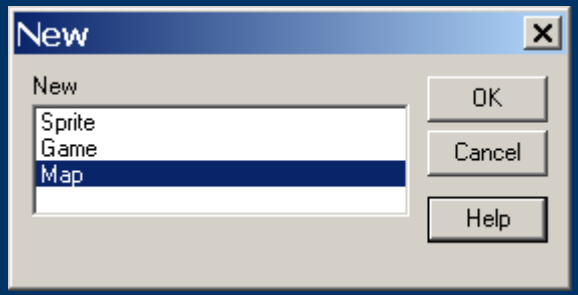
- The Tile Iso View Mode is useful for building a palette that will be used for an isometric map. It is the artist's task to set the right isometric parameters (usually the same parameters as the map).
- The normal view mode is still helpful for isometric tilesets when setting the collision mask



Sprite

Map editor – Isometric map – Animal Park example

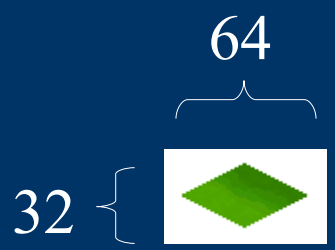
- Then, we create a isometric map:
  - File -> New -> Map

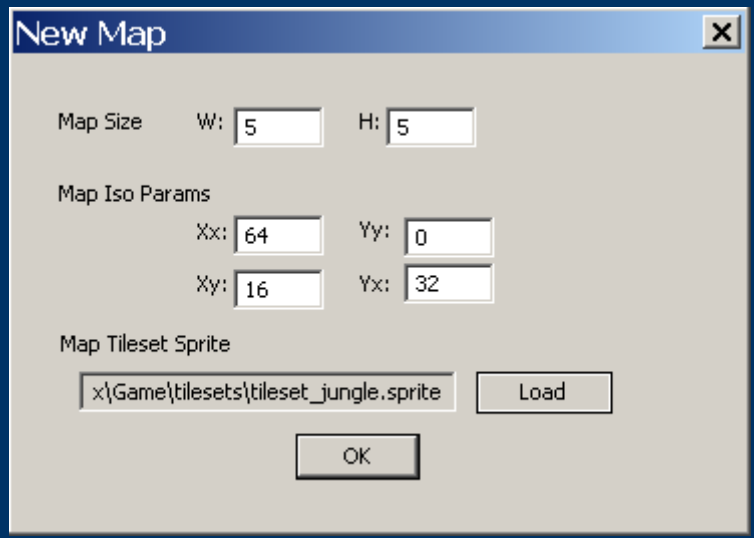


Sprite

Map editor – Isometric map – Animal Park example

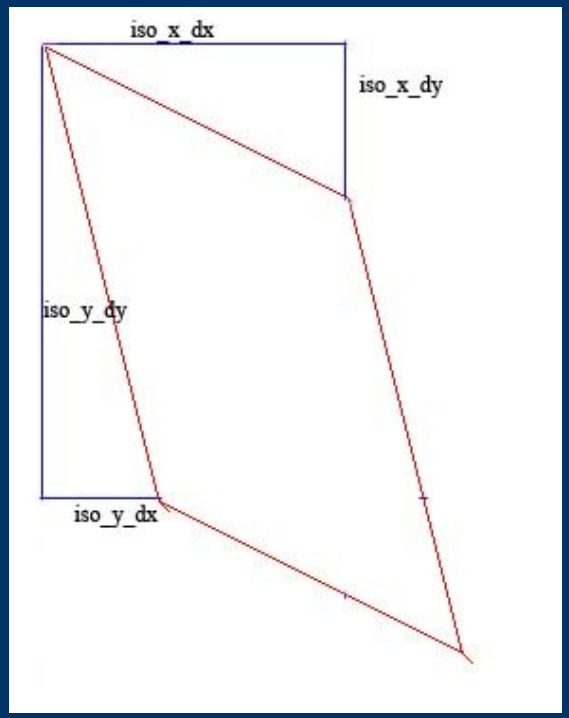
- ....with the following characteristics:

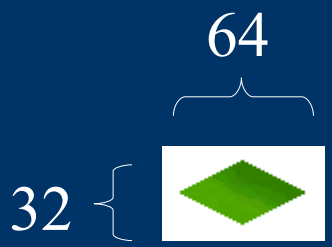


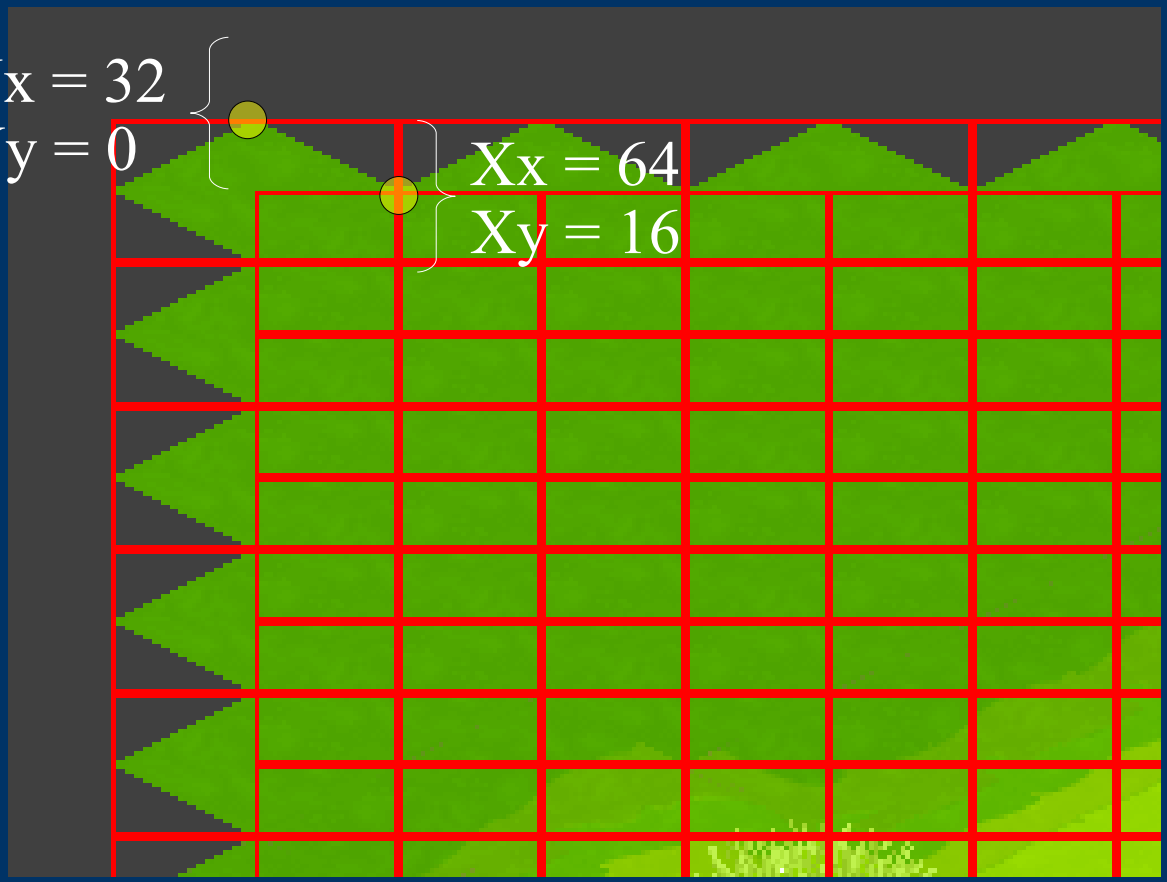


Sprite

Map editor – Isometric map – Animal Park example



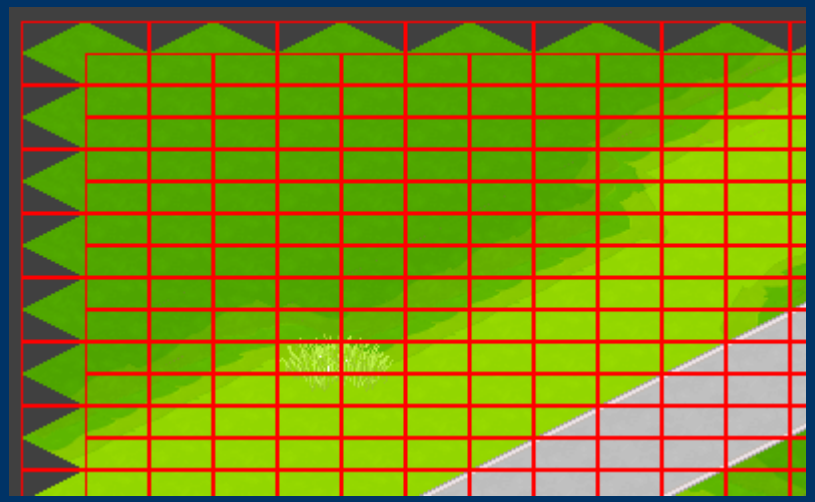


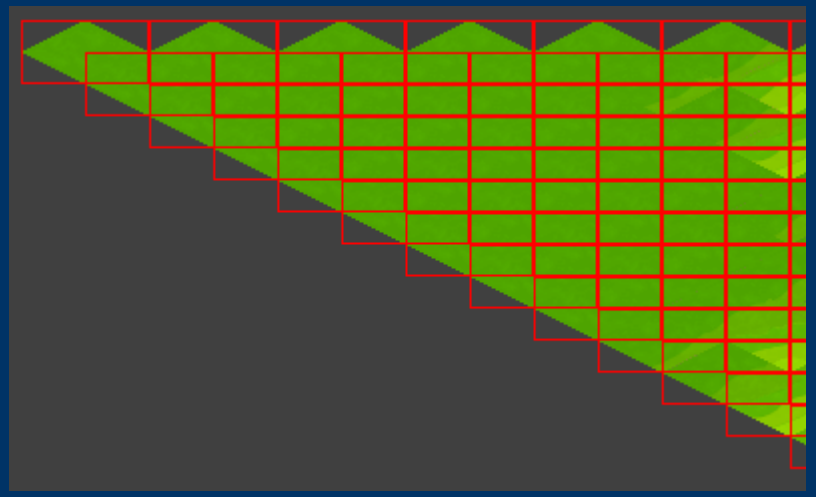


Sprite

Map editor – Isometric map – Animal Park example

- Important note:
  - To edit properly you have to modify the `.aTLMap` file by adding the `ISO_VIEW 1` line:





```
//MAP "Tileset_Animal"
{
    NAME "Tileset_Animal"
    TILESET "..\tilesets\tileset_jungle.sprite"
    MAP_SIZE 20 56
    ISO_XPARAMS 64 0
    ISO_YPARAMS 16 32
    ISO_VIEW 1
    MAP_TILES
    00010000 00010000 00010000 00010000 00010000 00040006
```

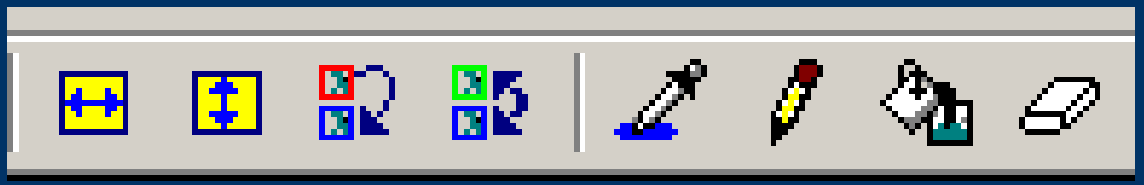
```
//MAP "Tileset_Animal"
{
    NAME "Tileset_Animal"
    TILESET "..\tilesets\tileset_jungle.sprite"
    MAP_SIZE 20 56
    ISO_XPARAMS 64 0
    ISO_YPARAMS 16 32

    MAP_TILES
    00010000 00010000 00010000 00010000 00010000 00
```

Sprite

Map editor – Editing

- In any kind of map you may want to:
  - draw a tile ()
  - get one or more tile/s ()
  - remove any tile ()
  - flip vertically a tile before drawing it ()
  - flip horizontally a tile before drawing ()
  - replace one or more tile/s ()
  - exchange one tile with another ()



Conclusion

- A map is a file that contains information about what tile is placed in which place.
- Maps are then used in the level editor to create layers.
- Physical maps are a common choice for collision detection systems.
- ISO Maps create a 3D effect, but it's 2D.

Bibliography

- **AuroraGT official repository**
  https://terminus.mdc.gameloft.org/vc/tools/AuroraGT
- **AuroraGT main wiki**
  https://wiki.gameloft.org/twiki/bin/view/Main/AuroraGT
- **Unicode**

http://www.unicode.org/standard/principles.html#What_Characters

Contact us

- Please, we look forward for any suggestions or bug found:
  - send us a mail to World-AuroraSuggestions@gameloft.com