**User Guide - Hexagonal Grid for Wargames**

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**Introduction**

The Hexagonal Grid utility is a specialized tool for wargames that allows you to:

* Overlay hexagonal grids on maps
* Automatically detect terrain types
* Manage accessible and inaccessible areas
* Calculate neighborhoods for movement
* Save and load configurations

**Installation and Startup**

**Requirements**

* Windows 10/11
* 100 MB free disk space
* Minimum resolution: 1024x768

**Starting Up**

1. Launch the hexagongridflattop.exe executable
2. The application opens with a default grid
3. Use the right panel for commands

**User Interface**

**Main Area**

* **Map area**: Displays the map and hexagonal grid
* **Command panel** (right): Buttons and controls
* **Information area** (bottom): Selected hexagon details

**Basic Controls**

* **Left click**: Select a hexagon
* **Drag and drop**: Move map and grid together
* **Arrow keys**: Fine-tune position
* **+/-**: Enlarge/reduce hexagons

**Map Management**

**Import a New Map**

1. Click **"Import map"**
2. Select your image (PNG, BMP, JPG, JPEG)
3. The map loads automatically
4. Adjust the grid to match the map

**Load an Existing Map**

1. Click **"Load a map"**
2. Select a previously saved map
3. Grid and all parameters are restored

**Save a Map**

1. Click **"Save map"**
2. Map, grid, and all parameters are saved

**Grid Creation and Adjustment**

**Grid Parameters**

* **Columns/Rows**: Modify grid size
* **Orientation**:
  + ☐ Flat Top: Hexagons with flat side on top
  + ☑ Pointy Top: Hexagons with point on top
* **CoinIn**: Modifies hexagon alignment

**Precise Adjustments**

* **Arrows**: Move pixel by pixel
* **+/-**: Adjust hexagon size
* **Ctrl+S**: Save adjustments
* **Ctrl+L**: Load adjustments
* **Ctrl+R**: Reset to default values

**Generate a New Grid**

1. Modify parameters (columns, rows, CoinIn)
2. Click **"Generate grid"**
3. New grid replaces the old one

**Application Modes**

The application offers 3 main modes:

**Normal Mode**

* Hexagon navigation and selection
* Detailed information display
* Grid adjustments

**Detection Mode**

* Automatic terrain type detection
* Reference area selection
* Automatic classification of all hexagons
* Manual by click update.

**Suppression Mode**

Two sub-modes:

* **Suppression**: Make hexagons invisible and inaccessible
* **Exemption**: Make hexagons visible but inaccessible

**Terrain Detection System**

**Detection Steps**

1. **Switch to Detection mode**
2. **Reference selection**:
   * Click "Start selection"
   * Click on hexagons representative of each terrain type
   * Click "End selection"
3. **Automatic classification**: AI analyzes and classifies all hexagons
4. **Manual correction**: Use spinner to correct errors

**Color Interpretation**

* **Red**: Reference hexagons
* **Green**: Automatically classified hexagons
* **Black**: Hexagon numbers (normal mode)

**Suppression and Exemption System**

**Suppression Mode**

* **First click**: Suppress hexagon (red cross)
* **Second click**: Restore hexagon
* Suppressed hexagons are invisible and inaccessible

**Exemption Mode**

* **First click**: Exempt hexagon (red O)
* **Second click**: Remove exemption
* Exempt hexagons are visible but inaccessible to neighbors

**Important Differences**

| **Aspect** | **Suppression** | **Exemption** |
| --- | --- | --- |
| Visibility | Invisible | Visible |
| Accessibility | Inaccessible | Inaccessible |
| Display | Red cross (X) | Red circle (O) |
| Usage | Permanent obstacles | Temporary forbidden zones |

**Save and Load**

**File Types**

* **Map image**: PNG, BMP, JPG, JPEG
* **Hexagonal data**: CSV (hexgridplat.csv)
* **Parameters**: TXT (adjustments.txt)

**Save Structure**

./save/

├── MapName/

│ ├── MapName.png # Map image

│ ├── hexgridplat.csv # Hexagon data

│ └── adjustments.txt # Grid parameters

**Compatibility**

* Saves are compatible between versions
* Old files without exemptions are automatically updated

**Keyboard Shortcuts**

| **Shortcut** | **Action** |
| --- | --- |
| **Arrows** | Move grid |
| **+ / =** | Enlarge hexagons |
| **- / \_** | Reduce hexagons |
| **Ctrl+S** | Save parameters |
| **Ctrl+L** | Load parameters |
| **Ctrl+R** | Reset parameters |

**Troubleshooting**

**Common Problems**

**Grid doesn't display**

* Check that "Show grid" is enabled
* Try regenerating the grid

**Exemptions disappear after loading**

* Make sure you saved with "Save map"
* Verify that CSV file contains "Exempt" column

**Map won't load**

* Check image format (PNG, BMP, JPG, JPEG)
* Ensure image is not corrupted

**Slow performance**

* Reduce grid size
* Close other applications

**Technical Support**

For technical assistance:

1. Note the exact error message
2. Describe steps that caused the problem
3. Attach save files if possible

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