



**PLENUM**  
ATLAS

# Plenum Atlas

User Handbook

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Map-Based Data Visualization  
Transform your data into interactive map dashboards

Version 1.0 – March 2026  
[pixelplenum.com](http://pixelplenum.com)

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# 1 Introduction

Plenum Atlas is a professional tool for visual analysis of location-based data. Import a CSV or Excel file, choose a map region – and your data instantly comes to life on an interactive map.

Whether it's revenue by country, location comparisons or geopolitical analyses: Plenum Atlas makes complex relationships understandable at a glance. The app runs entirely in the browser – your data never leaves your device.

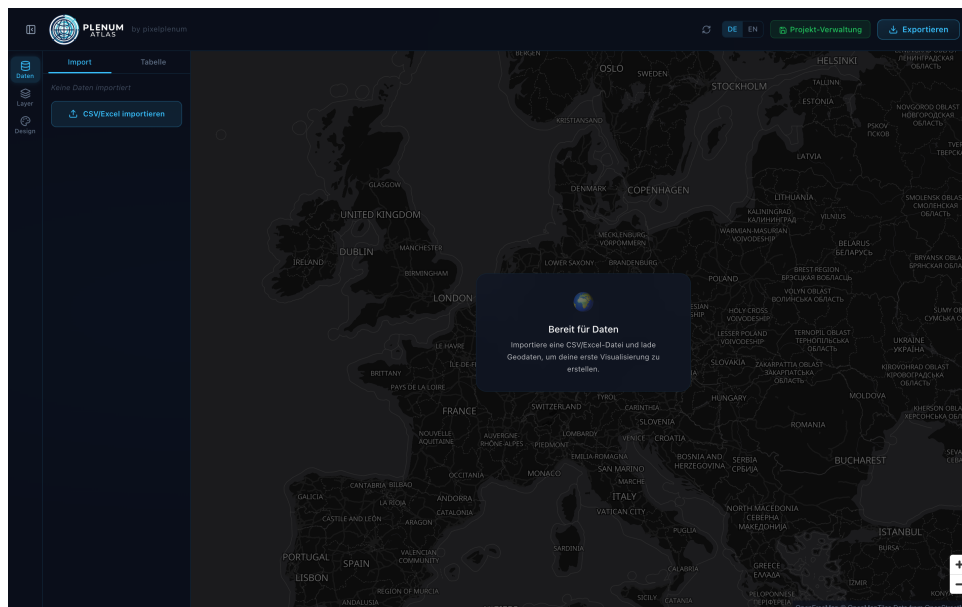
## What you can do with Plenum Atlas

- Visualize CSV and Excel data on interactive maps
- Color regions (choropleth), place points and bubbles
- Display heatmaps, connection lines and hub-spoke networks
- Place dashboard windows with charts, tables and KPIs over the map
- Export everything as image, PDF, PowerPoint, Word or interactive HTML
- Save projects and continue editing later

**Tip:** Plenum Atlas works entirely locally in your browser. Your data is not uploaded and never leaves your device. Ideal for confidential business data.

## 2 The User Interface

When you first open the app, you see the empty workspace with a world map in the background. The interface is divided into four areas:



*Plenum Atlas start screen*

### Toolbar (top)

The toolbar contains the Plenum Atlas logo, the language switcher (DE/EN), the map reload button, project management and the export button.

### Sidebar (left)

The sidebar is divided into three main sections, accessible via the icon bar on the left edge:

- **Data:** Import new files and data table with all imported data
- **Layers:** Manage all map layers (order, visibility, configuration) and legend
- **Design:** Choose map style, configure map title and InfoView settings

### Map Area (center)

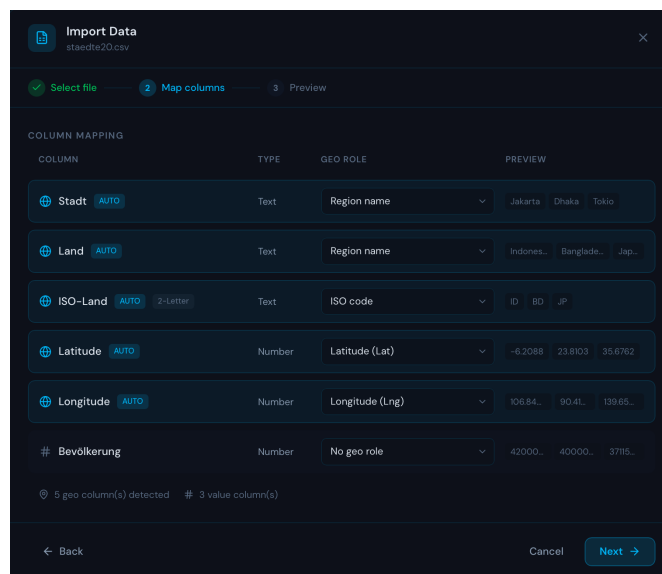
The main area displays the interactive map. Here you can see your data visualizations, dashboard windows and navigate using the mouse (drag to pan, scroll wheel to zoom).

## 3 Importing Data

Plenum Atlas works with the files you already have. Supported formats are CSV files and Excel files (XLSX, XLS).

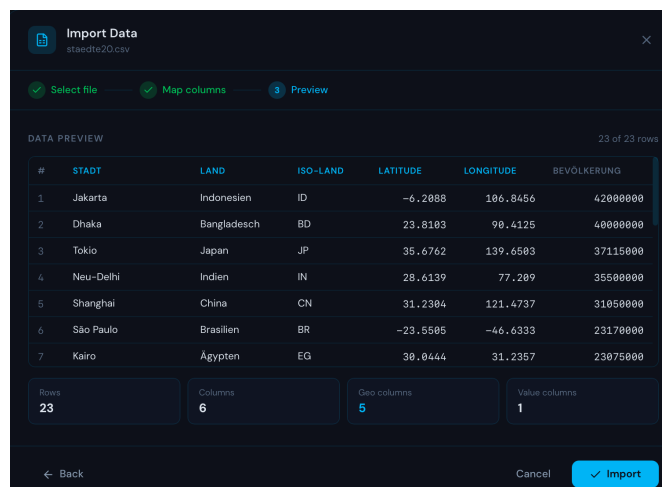
### How to import data

1. Click on **Data** → **Import** in the sidebar, then click the **Import CSV/Excel** button.
2. Drag and drop your file into the area or click to select.
3. Plenum Atlas automatically analyzes your columns and detects data types (numbers, text, dates), geographic columns (country names, ISO codes, coordinates) and geo roles.



Column mapping: Data types and geo roles are automatically detected

4. Review the automatic mapping. You can manually adjust any data type and geo role.
5. The preview shows your data before import – with statistics on rows, columns and geo columns.



Data preview with statistics before import

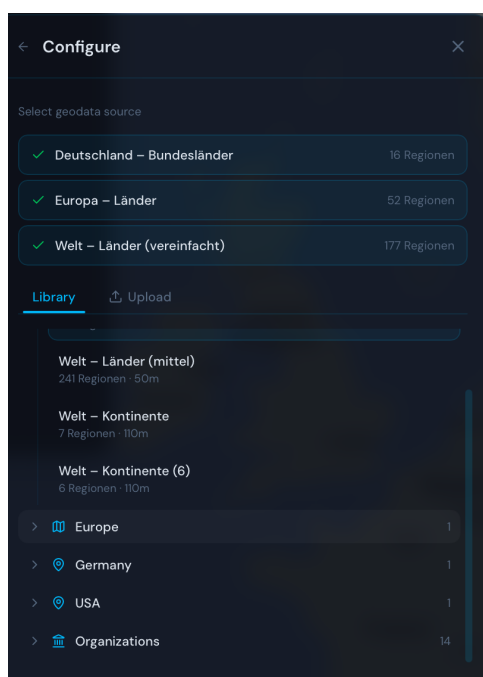
6. Click **Import** to load the data.

**Tip:** You can load multiple data sources simultaneously and display them independently on the map. This allows you to combine, for example, sales data and population statistics in a single dashboard.

## 4 Geodata & Map Regions

For choropleth maps (colored regions), you need geodata that defines the boundaries of the regions. Plenum Atlas comes with an extensive collection:

- **World** – Country borders in three resolution levels
- **Continents** – 7 or 6 continents (Americas combined)
- **Europe** – European countries
- **Germany** – 16 federal states
- **USA** – 50 states + Washington D.C.
- **International Organizations** – EU, NATO, G7, G20, BRICS+, OECD and many more



Geodata library: Pre-built regions and custom uploads

You can also upload your own geodata as **GeoJSON** or **Shapefile (ZIP)**. Shapefiles are automatically converted to GeoJSON.

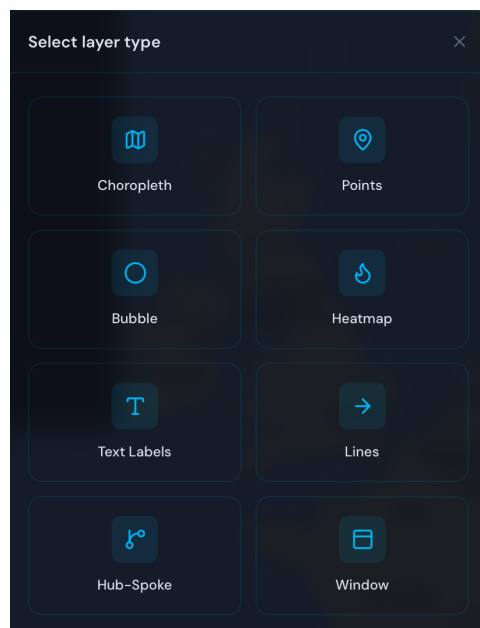
**Tip:** Geodata is automatically offered for selection when creating a choropleth layer. You don't need to load it separately.

## 5 Creating Layers

Every visualization in Plenum Atlas is a **layer** – a data layer placed over the map. You can display any number of layers on top of each other, each with its own data and settings.

### Adding a new layer

1. Switch to the **Layers** section in the sidebar.
2. Click **Add Layer**.
3. Choose the desired layer type.



*Layer type selection: 8 visualization types are available*

The following 8 layer types are available:

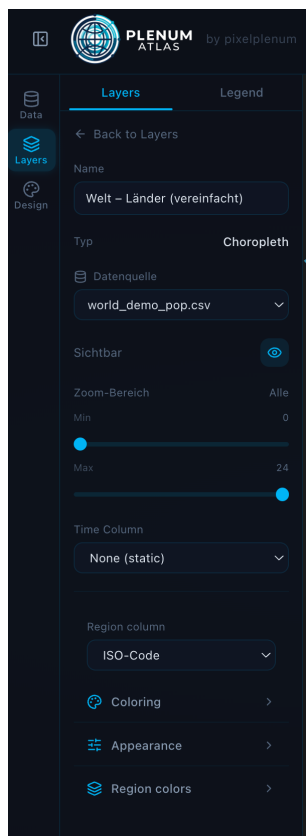
<b>Choropleth</b>	Color regions by data value
<b>Points</b>	Markers on the map from coordinates (Lat/Lng)
<b>Bubble</b>	Circles with data-driven size and color
<b>Heatmap</b>	Density visualization from coordinate points
<b>Text Labels</b>	Labels from a data column placed on the map
<b>Lines</b>	Connection lines between start and end coordinates
<b>Hub-Spoke</b>	Central point connected to multiple destinations
<b>Window</b>	Dashboard window with charts, table or KPI

### Managing layers

In the **Layer Panel** you can see all active layers. Here you can:

- Change the **order** via drag & drop (grip icon on the left)

- **Show/hide** a layer using the eye icon
- Adjust **opacity** with the slider
- Open the **detail configuration** via the gear icon
- **Delete** a layer using the trash icon



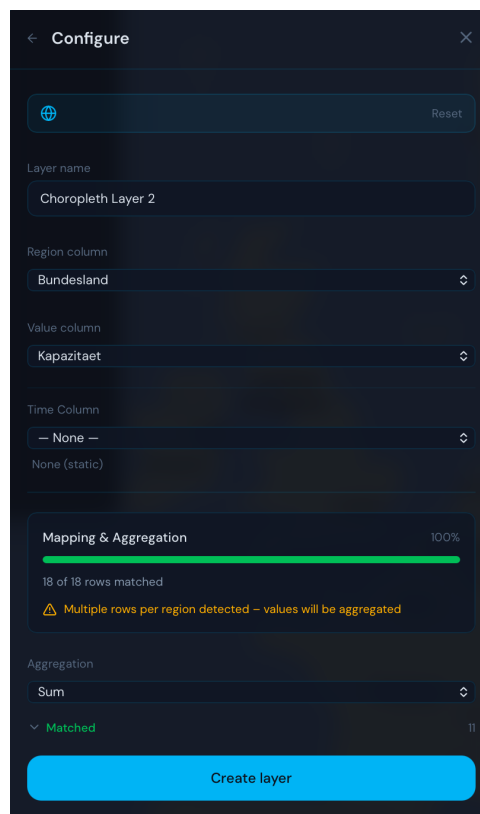
*Layer detail configuration: data source, visibility, time column and more*

## 6 Choropleth Layer

The choropleth layer is the classic thematic map: regions are colored by area, based on data values. The higher the value, the more intense the color.

### Creating a choropleth

1. Add layer → Select **Choropleth**
2. Choose a geodata source (e.g., Europe – Countries)
3. Map the region column and value column from your data
4. Plenum Atlas shows a match preview: which data rows were assigned to which region



*Choropleth configuration with column mapping and aggregation*

### Data Aggregation

When your data is more granular than the map regions (e.g., country data on a continent map), Plenum Atlas automatically detects this and aggregates the values per region. The aggregation function (sum, average, minimum, maximum, count) is freely selectable.

### Color Palettes

8 professional color palettes are available, with automatic quantile or linear distribution. Individual regions can also be colored individually.

## 7 Point, Bubble & Heatmap Layers

### Point Layer

Markers on the map from coordinates (latitude/longitude). 6 shapes are available: Pin, Circle, Star, Diamond, Square, Triangle. You can also upload custom SVG icons.

- Color and size can be fixed or data-driven
- With many points, they are automatically grouped into clusters

### Bubble Layer

Circles with data-driven size and color – ideal for proportional representations such as population figures or revenue volumes. Supports data aggregation: when grouping, individual points are merged into a single bubble at the centroid.

### Heatmap Layer

Density visualization from coordinate points. Three color gradients (Warm, Cool, Spectrum), adjustable radius and intensity. Optionally with a weight column.

## 8 Lines & Hub-Spoke Layers

### Lines Layer

Connection lines between two coordinate pairs – for routes, supply chains or migration flows.

- Three line styles: solid, dashed, dotted
- Optional arrows at endpoints
- Data-driven line width

### Hub-Spoke Layer

A central point (hub) connected to multiple destinations (spokes). Displayed as Bézier curves or straight lines. Perfect for network visualizations, distribution models or flight connections.

- Hub color and size configurable
- Line color, width and style adjustable
- Data-driven width for e.g. passenger numbers

## 9 Dashboard Windows

Dashboard windows are glassmorphism overlays placed directly over the map. You can freely position them (drag by the title bar) and resize them (drag the corner).

Each window can contain one of the following elements:

- **Data Table** – sortable mini-table with selectable columns
- **Bar Chart** – with data aggregation and individual colors
- **Line Chart** – for trends and time series
- **Pie Chart** – donut style with percentage display
- **KPI Value** – a large aggregated metric (sum, average, min, max, count)

### Filter Mode

Each window can be individually configured whether it responds to map clicks (**Global** – filters with the map) or always shows all data (**Independent**). For complex drill-down scenarios, filter rules with two-sided column mapping can be defined.

## 10 Map Styles

The base map can be changed at any time under **Design** → **Map**. 10 map styles are available:

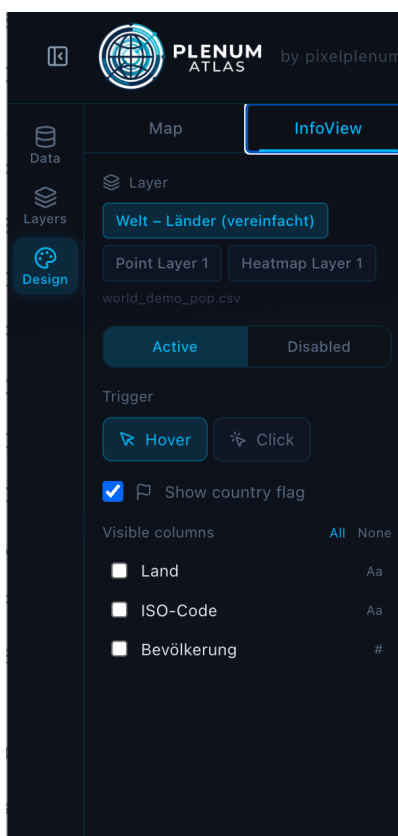
<b>Dark</b>	Dark background – ideal for vibrant visualizations
<b>Positron</b>	Light, minimal style – classic data analysis
<b>Liberty</b>	Balanced with soft colors
<b>Bright</b>	Bold colors, cartographic style
<b>Fiord</b>	Dark blue with Nordic aesthetics
<b>Voyager</b>	Warm, detailed CARTO style
<b>Dark Matter</b>	Minimalist dark, CARTO
<b>Satellite</b>	Real satellite imagery (Sentinel-2)
<b>Satellite+</b>	Satellite imagery with labels
<b>Terrain</b>	Topographic map with contour lines

# 11 InfoView & Tooltip

When hovering over or clicking on a region on the map, a configurable tooltip with region details appears.

The configuration can be found under **Design** → **InfoView**:

- **Trigger:** Hover (mouse pointer) or Click
- **Country flag:** Automatically detected (250+ flags)
- **Columns:** Choose which data columns are displayed in the tooltip
- **Per layer:** Each layer can have its own InfoView settings



*InfoView configuration: trigger, flags and visible columns per layer*

## 12 Map Title

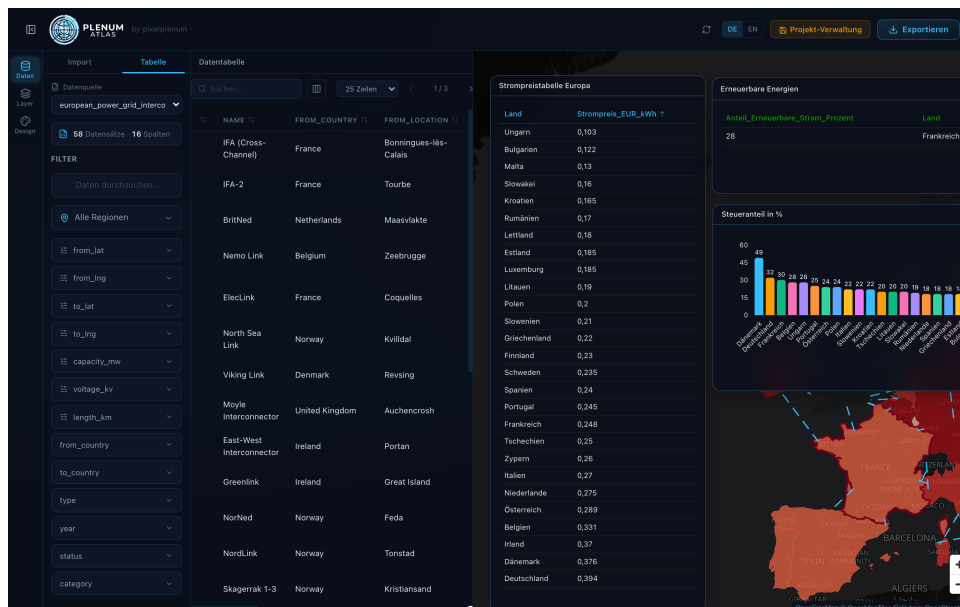
The map title is a freely positionable glassmorphism overlay on the map. Activate it under **Design** → **Map** → **Show map title**.

Settings:

- Title and subtitle with individual text alignment (left/center/right)
- Font size and color per line
- Background color and opacity
- Border color, width and opacity
- Position adjustable via drag & drop on the map

## 13 Data Table

The integrated data table can be found under **Data** → **Table**. It displays all imported data and is bidirectionally linked with the map.



The data table with sorting, filtering and column toggle

Features:

- Sort by any column (click on the column header)
- Search within the table
- Show/hide columns
- Paginated navigation (10, 25, 50 or 100 rows)
- Automatic country flag column
- Hover and click synchronization with the map

**Tip:** Click on a row in the table to highlight the corresponding region on the map. Conversely, clicking on the map highlights the row in the table.

## 14 Filter System

Three filter levels can be combined:

- **Free text search** – searches across all columns
- **Region filter** – multi-select from a dropdown list
- **Value range filter** – minimum/maximum via slider or category selection

Active filters are displayed as badges and can be removed individually or all at once. Filters affect the map, table and all dashboard windows simultaneously.

# 15 Time Animation

If your data contains a time column (date or year), you can activate a time-based animation.

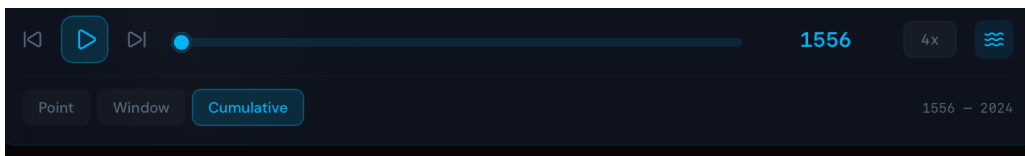
## Assigning a time column

When creating a layer, you can optionally select a time column. This can also be done later via the detail configuration (gear icon).

## Time Player

As soon as at least one layer has a time column, the Time Player appears at the bottom of the map.

Features:



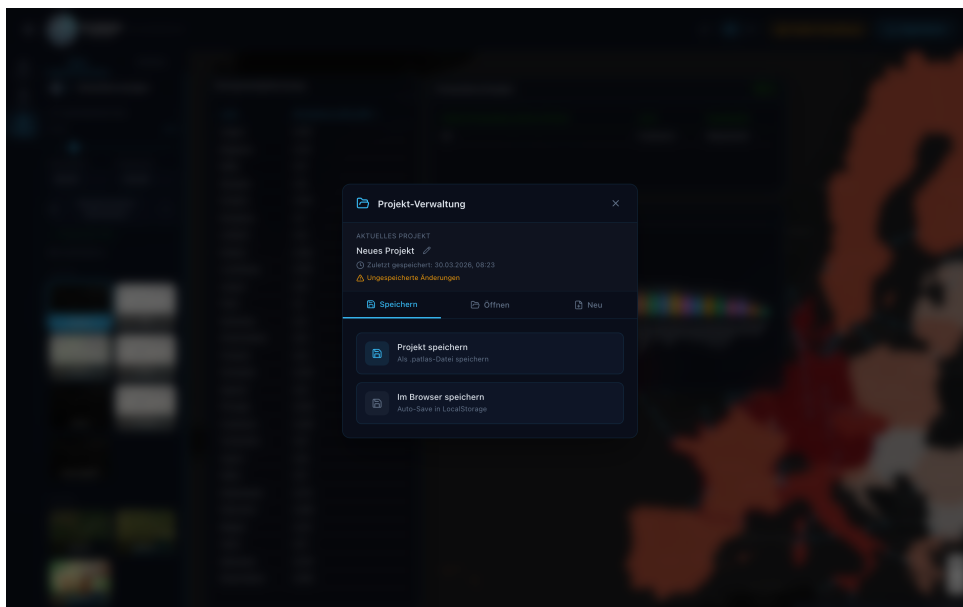
*The Time Player: play/pause, slider, speed and three playback modes*

- **Play/Pause:** Start/stop the animation
- **Slider:** Manually navigate through time
- **Speed:** 0.5x to 4x
- **Modes:** Point in time (current value only), Time window (range), Cumulative (everything up to now)
- **Smooth transitions:** Choropleth values are interpolated between time steps

**Tip:** Keyboard shortcuts: Space bar for play/pause, left/right arrow keys for single steps.

## 16 Project Management

Plenum Atlas saves projects in its own **.patlas format** (JSON-based). A project contains all data, layers, settings, filters and window positions – everything in a single file.



*The project management dialog*

### Saving

- **Save project:** Saves as a .patlas file. The first time you save, you choose the location; afterwards it overwrites directly.
- **Save as:** Saves under a new name/location
- **Save in browser:** Stores in LocalStorage (no download required)

### Opening

Click **Open** and select a .patlas file. The entire project is restored – including all data, layers and settings.

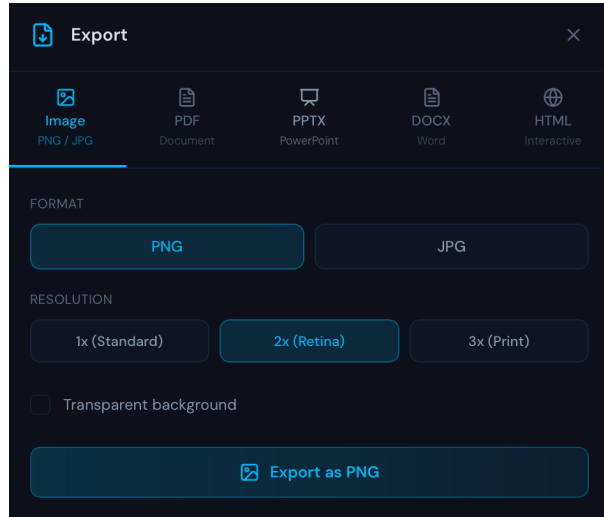
### Auto-Save

Plenum Atlas automatically saves every 30 seconds in the browser (LocalStorage). The next time you open the app, the last project is automatically restored.

**Tip:** Your browser will warn you if you try to close the page with unsaved changes.

# 17 Export

Click the **Export** button in the toolbar. Five export formats are available – all work client-side, without a server.



*The export dialog with five format options*

## Image (PNG/JPG)

Screenshot of the map view in three resolution levels: Standard, Retina (2x) and Print (3x).

## PDF

A4 document in portrait or landscape format with optional title and selectable image quality.

## PowerPoint (.pptx)

16:9 widescreen slide with the dashboard screenshot. Optionally with a second slide for the data table.

## Word (.docx)

A4 document with dashboard image and optional data table.

## Interactive HTML

A standalone HTML file that works without a server. The map remains interactive: hover tooltips, click filters, dashboard windows with drag & resize – all in the browser.

**Tip:** The HTML export is perfect for sharing via email or embedding in websites. The file requires no installation, just a modern browser.

## 18 Language & Settings

Plenum Atlas is available in **German** and **English**. Switch the language at any time using the **DE/EN** toggle in the toolbar.

Numbers, dates and currencies are automatically formatted according to the selected language (e.g., 1,234.56 in English vs. 1.234,56 in German).

## 19 Keyboard Shortcuts

<b>Escape</b>	Clear selection / Close dialog
<b>Space</b>	Time Player: Play/Pause
<b>← / →</b>	Time Player: Single step back/forward

— End of Handbook —

Plenum Atlas is developed by [pixelplenum.com](http://pixelplenum.com)