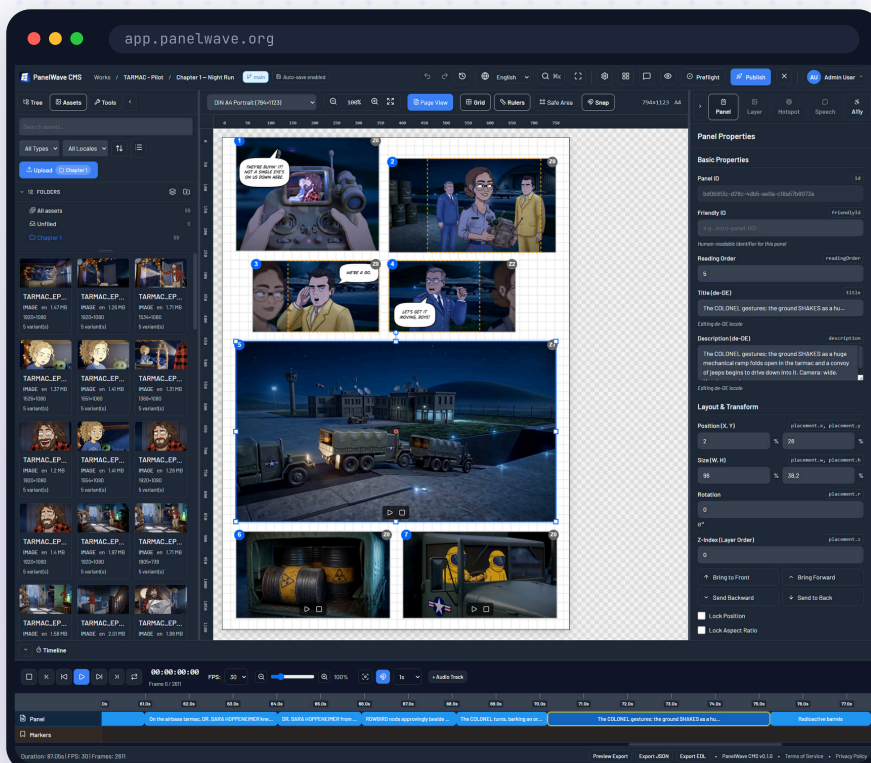


OPEN FORMAT · OPEN-SOURCE PLAYER · PROFESSIONAL CMS

The Future of Graphic Novels Is Dynamic. Cinematic. Interactive.

PanelWave is an open JSON format, an open-source player and a professional CMS for the next generation of graphic novels: layered panels with sound and motion, branching stories, and every language in one work.

Panels become nodes in a story graph. Readers choose their path, switch language mid-read and set their own pace — on tablets, phones, desktops, in print and on video. Your visual art. Your story. Your rules.



PanelWave CMS · Canvas editor with layered panels and speech balloons, asset library, panel inspector and timeline. The preview runs the same open-source player your readers use.



CC BY 4.0

Open Format

A graph-based JSON specification for interactive, multilingual panel storytelling. Public, documented, versioned.



MIT

Open-Source Player

A high-performance Angular/TypeScript library that renders PanelWave works anywhere: cinematic transitions, audio, interactivity, WCAG 2.1 AA accessibility.



SAAS

Professional CMS

No-code WYSIWYG authoring in your browser: compose, localize, monetize, publish and analyze. Free to start, with pro tools when your story grows.

Who it's for

Use as much or as little of the stack as you like.

Independent artists

Webcomics that move beyond static images. Keep control of your work while adding audio, motion and choices.

Studios & publishers

Teams, review workflows, multilingual editions and multi-environment publishing at scale.

Educators & trainers

Interactive learning with branching scenarios, decisions and accountability through analytics.

Draw once. Publish everywhere.

Your content always belongs to you. The format and player are free and permissive; the CMS is where we earn our living. No lock-in, ever.

1.6.0

SCHEMA VERSION

MIT

PLAYER LICENCE

100%

REVENUE CREATORS KEEP

11

OUTPUT FORMATS

panelwave.org docs.panelwave.org


FOUNDING CREATORS
panelwave.org/founding-creators
limited to 50 places



Everything you need to create – on an open standard.

One PanelWave manifest drives every output: the CMS writes it, the open-source player renders it, and the schema keeps everyone honest.

PANELWAVE CMS The Creator's Studio

No-code · in your browser · start from art, a script or finished pages

■ WYSIWYG Canvas Editor

Drag-and-drop layers with z-ordering, magnetic guides, rulers and grid · comic balloons with a style cascade (work → character → bubble) · hotspots (rectangle, circle, polygon) with go-to, variable and modal actions · panel variants driven by reader variables · unlimited undo/redo

■ Visual Story Graph

Panels as nodes, transitions as edges · conditional branching with a JSON Logic builder · variable mutations on edge traversal · flow simulator with live variable state · validation for orphan panels and dead ends · auto-layout

■ Timeline & Animation

Keyframe editor for layer properties with easing curves · viewport camera start/end (slide, zoom) · video panels play from the playhead: loops, ping-pong, poster frames · audio mixing for ambient, music, SFX and voiceover

■ Smart Asset Management

Drop files from your desktop into the library or straight onto the canvas · folders, tags, multi-select, reusable asset picker · responsive WebP ladder (640–2560 px) for every image · automatic transcoding: AVIF/WebP, AAC/Opus, H.264 with poster frames

■ Multilingual Publishing

Extract every string, translate, write it back · DeepL-assisted translation, translation memory, glossary, stale-string detection · CSV and XLIFF 1.2 round-trip for external translators · text-to-speech voices per character · per-locale art, audio and video

■ Monetization & Access

Paywall rules by work, chapter, panel or extras · products, coupons and regional price points · age gates and signed URLs for premium content · content map with health checks, preview as any reader · **zero revenue share: you keep 100% of your content sales**

■ Reading Analytics

Trends, reading funnel and panel engagement from real reader events · hotspot click heatmaps per panel · segments by device and locale, previous-period comparison · KPI drill-down and CSV export · privacy-aware, consent-driven, built-in retention limits

■ Preview, Preflight & Publish

The embedded open-source player in device frames (mobile, tablet, desktop), test scenarios, bandwidth throttling · preflight validation with batch auto-fix and editor deep links · shareable preview links, no account needed · release history with rollback preview

■ Import, Export & Teams

AI-assisted import from Fountain screenplays or scanned pages — you review every cut · export to print-ready PDF (A4/US Letter), PowerPoint and MP4 video · portable work archive: manifest plus every asset as one zip · Owner/Admin/Editor/Viewer roles, panel comments, shared character library, 2FA

OPEN FORMAT The panelwave.json manifest

JSON Schema 2020-12 · v1.6.0 · CC BY 4.0 · semver, every 1.0 manifest still validates

Top level	3 required: <code>panelwave</code> <code>meta</code> <code>chapters</code> · optional <code>assets</code> <code>variables</code> <code>settings</code> <code>localization</code> <code>extras</code> <code>paywall</code> <code>tracking</code> <code>ui</code> · <code>x</code> · extension fields
Story graph	entry panel + edges with JSON Logic condition, variable mutations, transition (cut, fade, slide, zoom, push, cover) and camera move
Panels & layers	image, video, audio, text, vector, plugin layers · z-order, parallax, animations · per-format views · accessibility hints, content warnings
Balloons	normal, rectangle, narrator caption, cut-top, thought, shout, whisper, connector · tails · cascade work → character → bubble · styleRef presets
Hotspots	rect, circle, ellipse, polygon (normalized) · actions goTo, setVariables, openExtras, openModal, pluginEvent · visiblelf conditions
Variables	boolean, number, integer, string, enum, date, time, datetime · scopes global, chapter, page, session, persistent · set / increment / toggle / append / remove
Localization	LocalizedString keyed by BCP-47 (en-US, de-DE ...) with fallback chains · per-locale image, audio, video and subtitle variants · RTL
Assets	catalog + folders · image variant ladder (w, h, density) · video variants with posters, play modes · audio roles ambient, music, voiceover, sfx · VTT/SRT
Formats	11 presets: mobile / tablet portrait · desktop, bigscreen, flex landscape · square · A4 + US Letter, portrait and landscape · video 16:9
Canvas · paywall · tracking	infinite-canvas layouts + camera moves (1.4) · paywall rules per work, chapter, panel, extras with preview panels + age gate · consent-aware event tracking

```
panelwave.json
{
  "panelwave": { "version": "1.6.0",
    "schema": "https://panelwave.org/schema/1.0/panelwave.schema.json" },
  "meta": {
    "id": "night-run",
    "title": { "en-US": "Night Run", "de-DE": "Nachtflog" },
    "locales": [ "en-US", "de-DE" ], "default_locale": "en-US"
  },
  "chapters": [ { "id": "ch-01", "panels": {
    "p1": {
      "layers": [
        { "id": "bg", "kind": "image", "assetId": "img-tarmac" },
        { "id": "jeep", "kind": "image", "assetId": "img-jeep",
          "z": 10, "parallaxDepth": 0.3 } ],
      "hotspots": [ { "id": "door", "label": { "en-US": "Hangar" },
        "shape": { "type": "rect", "x": 0.6, "y": 0.3, "w": 0.2, "h": 0.4 },
        "action": { "type": "setVariables", "mutations":
          [ { "op": "set", "var": "choice", "value": "hangar" } ] } } ]
      },
    "p2-gate": { ... }, "p2-hangar": { ... }
    },
  "graph": {
    "entry": "p1",
    "edges": [
      { "from": "p1", "to": "p2-hangar",
        "condition": { "===": [ { "var": "choice" }, "hangar" ] },
        "transition": { "type": "zoom" } },
      { "from": "p1", "to": "p2-gate", "transition": { "type": "slide" } } ]
    }
  }
}
```

Tooling: @panelwave/cli validate · bundle · diff · upgrade · @panelwave/types TypeScript interfaces · AJV or any JSON Schema 2020-12 validator

OPEN-SOURCE PLAYER @panelwave/player

MIT · Angular · TypeScript strict · RxJS · json-logic-js · the same player runs inside the CMS preview

RENDERING & NAVIGATION

- ✓ **Three views:** Panel View, Page View and the infinite-canvas Canvas View with camera pan and zoom
- ✓ **Graph navigation** with JSON Logic conditions, scoped variables, panel variants, back/forward history
- ✓ **Transitions** cut, fade, slide, zoom, push, cover · **video panels** with loops, ping-pong and posters

MEDIA, LANGUAGES & ACCESSIBILITY

- ✓ **WebAudio 4-bus mixer:** ambient, music, voiceover, SFX with independent volumes and fades
- ✓ **Responsive images**, LRU cache with memory budget, preloading · **runtime language switching** with fallbacks, RTL
- ✓ **WCAG 2.1 AA:** keyboard navigation, ARIA live regions, reduced motion, high contrast, content warnings, age gates

INTEGRATION

- ✓ **Entitlement adapter** for work / chapter / panel paywalls with blurred preview · **consent-aware tracking hooks**
- ✓ **Sandboxed plugin layers** with a host message bus: 360° scenes, mega-zoom, mini-games
- ✓ **Embed:** `npm i @panelwave/player` → `<pw-player-shell [manifestUrl]="...">` · tested with Jasmine, Playwright, axe-core