

HLC Operational Framework — Common Front Matter

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Scope of this document: One shared preface for codehu, codehl, codehy, codehw

1. What the HLC Framework Is

The **Hierarchical Location Codes (HLC)** framework is a reference and crosswalk system for classifying and connecting geopolitical entities, regions, subregions, countries, historical entities, waterbodies, ecological regions, and related structures.

Its purpose is **harmonization, not replacement**. HLC integrates internationally recognized standards — including ISO 3166 alpha-2/alpha-3 country codes, UN M49 numeric codes, US GENC codes, DIAM+, CWWN+, and major ecological classification systems — and adds hierarchical HLC extensions where existing standards are insufficient (pseudo-regions, dependencies, technical identifiers, historical entities, and waterbody naming).

The framework preserves **multiple coding schemes, versions, and hierarchical interpretations in parallel**. Where standards disagree or do not correspond cleanly, that condition is represented explicitly rather than resolved into a single forced answer. The framework is designed to be **extensible over time** while maintaining **stable internal identifiers** for longitudinal consistency.

2. The Four Files

File	Role
codehu	Namespace and code-ownership control: governs 2-gram and 3-gram code ownership across ISO, HLC, DIAM+, GENC, CWWN+ and technical codes.
codehl	Land-based master hierarchy: continents, regions, subregions, countries, dependencies, historical entities, organizations, climate/biogeographic zones. Anchors the full system.
codehy	Water and hydrographic hierarchy: oceans, seas, rivers, lakes, currents, undersea features, and marine/hydrographic crosswalks.
codehw	Ecoregions and ecosystems: terrestrial, freshwater, and marine ecological classification systems held as sibling views.

The files are coordinated but not merged. Each uses classification logic appropriate to its domain, and they cross-reference one another through shared codes and attribute tags.

3. Shared Notation

The following notation applies to **all four files**:

- *a* = alpha (A–Z) · *n* = numeric (0–9) · *x*, *y*, *z* = alphanumeric (A–Z, 0–9)
- *'..'* = exact phrase

- | = alternatives (equally valid codes or names for the same entity)
- > = redirect (points to the canonical or successor entry)
- ! = code defined outside the current sheet/file (external reference)
- * = duplicate entry representing a **legitimate alternative hierarchy**, not data redundancy
- ~, +, - = inherited / encroached / extended values from adjacent entries
- !- = range extension · () = optional extension or annotation

Attribute-locality rule: For duplicate (*) entries, the descriptive attributes reside only at the original (unmarked) entry. Duplicate copies carry the hierarchy placement only. This guarantees duplicates cannot contradict one another.

Inline Attribute Tags (IATs): Cross-references to external standards are stored inline as {scheme:value} (for example {UN:364}, {ISO:IR}, {MEOW:...}) to keep rows readable and editable. Known tag keys are documented in each file's column area.

4. Coordinates: What They Mean

WGS84 coordinates, where present, are provided **only as reference anchors** for orientation and best-fit regional assignment.

They are **not**:

- boundary definitions,
- polygon or shapeline geometry,
- precise spatial extents,
- inputs for GIS containment analysis.

There is **no plan to implement GIS shapelines**. Assignment of an entity to a region is based on best conceptual fit, not on spatial containment.

5. How Conflicting Classifications Are Handled

HLC treats classificatory disagreement as **information, not error**. Conflicts are preserved through the shared notation:

- **Alternative names/codes** → |
- **Deprecated or successor entities** → >
- **An entity legitimately under multiple parents** → *
- **Codes owned by another scheme** → !

- **Parallel institutional classifications** → {scheme:value} tags
- **Territorial disputes** → recorded neutrally (e.g., "claimed by X, Y") with no sovereign parent assigned

An entity may therefore appear in more than one hierarchy, hold more than one code, and be described from more than one standard's perspective simultaneously.

6. Limitations and Scope

These limitations apply to the framework as a whole and need not be repeated per file:

1. **Single maintainer.** The framework is compiled and maintained by one person (Jens Weynans) in spare time. It has no institutional editorial board, formal review process, or redactional overhead. It should be evaluated as a specialist reference framework, not as an official standard.
2. **Not an authority.** HLC does not define authoritative boundaries and does not replace ISO, UN, IHO, FAO, or any ecological source standard. Those sources remain authoritative within their domains; HLC assignments are interpretive harmonizations.
3. **No GIS geometry.** The framework contains no polygons or shapelines and none are planned. Coordinates are best-fit anchors only (see §4).
4. **Not for legal or spatial use.** HLC is unsuitable for legal boundary determination, maritime delimitation, cadastral mapping, or polygon-based spatial analysis.
5. **Snapshot, not real-time.** External references are snapshots current as of the stated version. They do not auto-update. The framework is released in versioned batches, not continuously.
6. **Stable internal identifiers.** HLC codes are intended to remain stable across releases even when external standards change. Deprecated entities are retained with redirects rather than deleted.
7. **Uneven granularity.** Detail follows the source systems. Some regions and domains are represented in fine detail; others are broad. This reflects the source standards, not inconsistency.
8. **Editorial judgment.** Which alternative hierarchies count as legitimate is a curatorial decision made by the maintainer. Reproducing an assignment independently may require that judgment.

7. Sources Integrated (Reference List)

The framework references, among others: ISO 3166 (-1/-2/-3), UN M49, US GENC, DIAM+, CWWN+, FAO/NAFO/ICES fishing areas, IHO Limits of Oceans and Seas, ACIC, Longhurst provinces, OSPAR, HELCOM, PAME, GIWA, USGS HUC, GOODS, GEZ, TEOW, BEOW, FEOW, EUNIS, MEOW, LMES, PPOW, WWF Global 200, and various national statistical classifications. Full per-domain source notes remain in the respective files.