Identifying taxa requires expert knowledge, which is becoming scarce. Observers need access to such knowledge, but identification keys are hard to use and even harder to make. An open, modern data format unambiguously capturing interlinked identification key data is needed to allow for interoperable solutions for editing and displaying digital keys.

Here, we present Clavis, an open data format schema for capturing knowledge required for taxon identification through digital keys, allowing for a level of detail beyond that of any current key format.

Clavis (Clavis Lightweight And Versatile Identification Schema) was developed after years of experience with tabular keys. Anything can be put into a sufficiently complex table, but the limitations of the flat, 2-axis structure made the contents increasingly repetitive, and the code to display it to the user needlessly complex. Clavis is a JSON (JavaScript Object Notation) schema, defining how to write and automatically validate any Clavis key. As keys are stored in JSON, they contain the required complexity in a compact manner, and are natively interpretable by all modern programming languages.

Clavis is fully open, and supports multilingualism, encoded geographical context, extended documentation and metadata, external services, non-binary characteristics, and more.

We deliberately present the Clavis format separately from any specific implementation. Solutions for editing and displaying keys have shorter life spans, and may be tailored to specific intended audiences. Our aim with presenting Clavis to the community separately is that it may serve as a solid, collaborative foundation for tools and data exchange in the long haul.