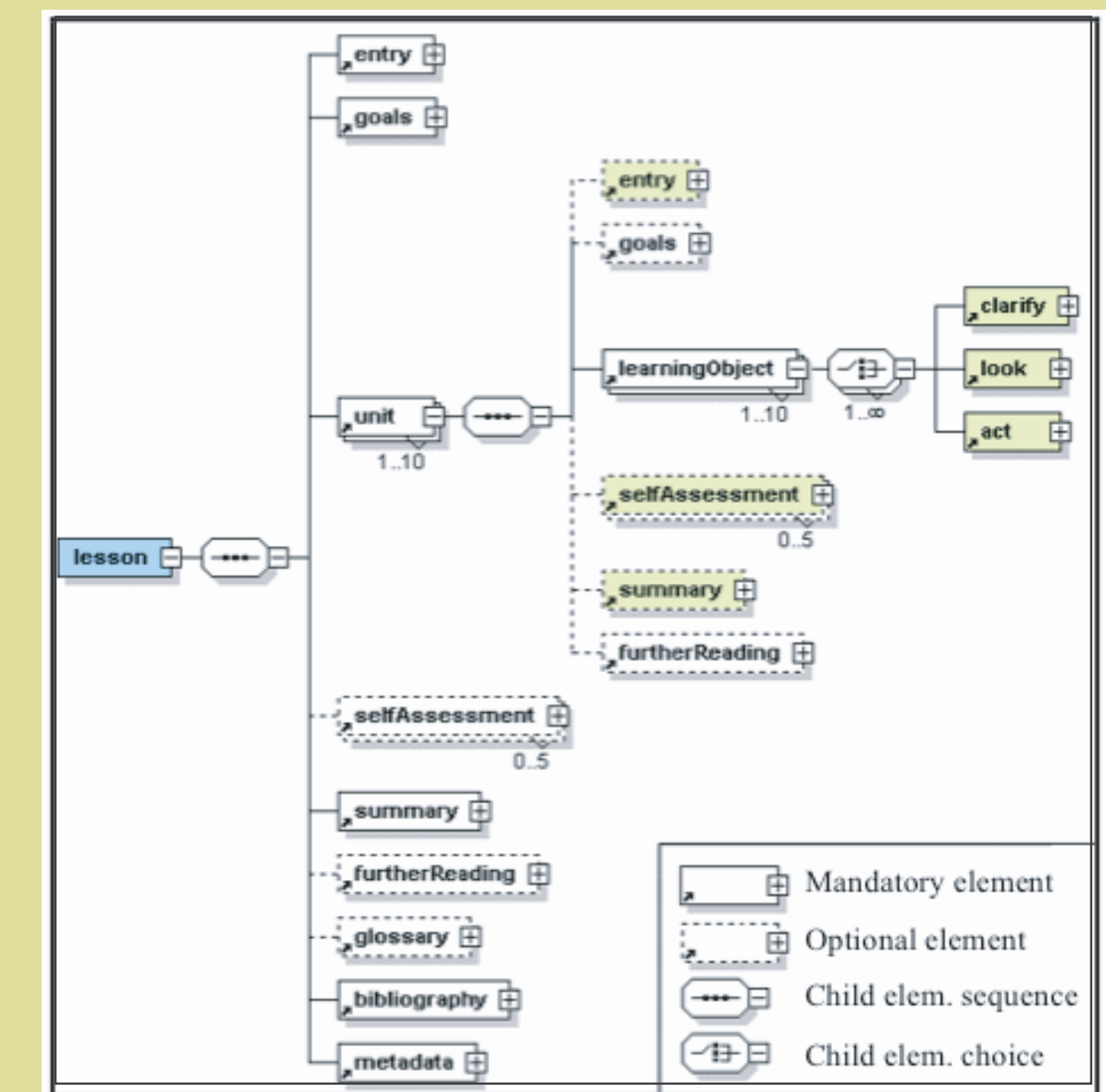


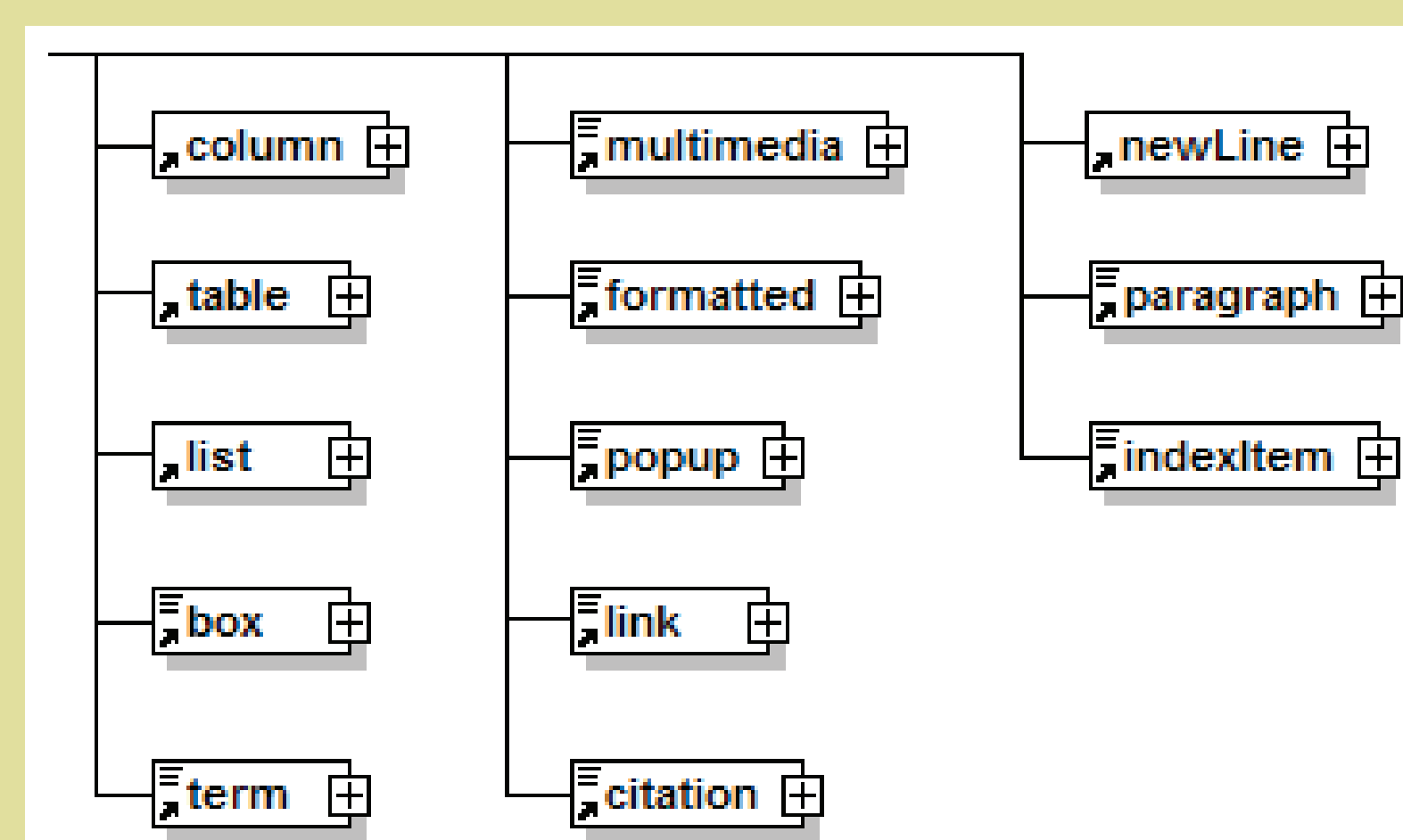
eLML: Creating structured e-Learning lessons using XML

The aim of creating eLML was to ensure **conformity to** certain **didactical guidelines** (ECLASS scheme) **and to e-Learning standards (IMS; SCORM)** while creating lessons for e-Learning courses. The open source XML approach of eLML is both a **sustainable and flexible** solution for storing lessons helping to keep the content up to date.

eLML lessons start with an introduction and a list of learning objectives. The content itself is divided into units which themselves are divided into learning objects (LO). Self-assessments, further reading recommendations, and summaries can be written either for a unit or for the whole lesson. A lesson should also include a glossary and a bibliography. All **elements are validated using a complex XMLSchema**. This prevents that e. g. books or papers are cited or referenced within a lesson without being listed in the bibliography or that glossary terms are used within learning objects without being defined in the glossary.



eLML content elements

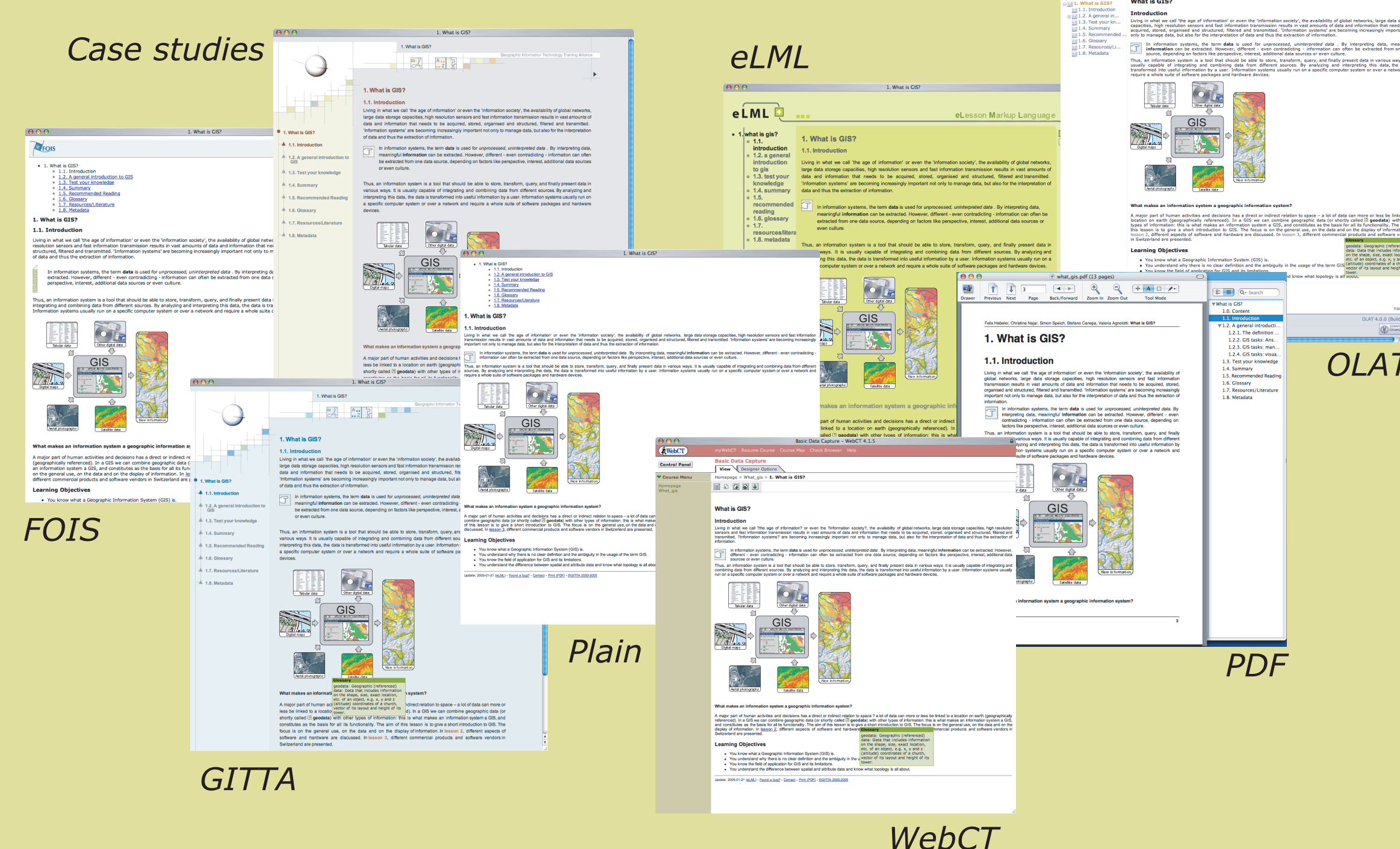


While writing content **eLML offers typical elements** like table, list, paragraphs or columns but also more e-Learning oriented elements like boxes, popups, citations, index/ keywords or glossary term references. The **representation of these elements is defined in a CSS file** and therefore no XSLT knowledge is needed for changing the style of e. g. boxes or paragraphs. Of course the integration of **multimedia elements** like Flash, SVG, X3D, audio, video etc. is **fully supported** in eLML.

eLML output options

With eLML **multiple output formats** are **possible**: The transformation into **HTML** (XHTML 1.0) uses templates to generate **personalized layouts**. eLML already contains some layout templates that can be used to develop content; or you can create your own template without any knowledge of XML. It is possible to generate one page per lesson or to generate multiple pages at unit or learning object level. The generated output is both **IMS Content Package** and **SCORM** compatible. Thus eLML lessons can be imported into most learning management systems (LMS). eLML also includes a **PDF version**, using Formatting Objects (FO) and Apaches open source FO Parser. A third output format for PDAs and mobile devices is planned and under construction.

One e-Lesson - many different layouts!



Why use eLML?

- Homogeneous content:** Using eLML allows *structuring e-learning content*, generate similarly looking lessons and still remain independent.
- Sustainability:** eLML is *based on XML*, offering *many advantages* compared to proprietary formats.
- "Real world application":** eLML was *developped and tested during three years* of a major Swiss e-learning project (GITTA: www.gitta.info).
- Community:** Using eLML means *sharing tools and knowledge* with other eLML users in a *growing community*.
- No Cost:** eLML is *open source* and therefore *free*.

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