# SBGN-ML, SBML visual packages, CellDesigner. Which? Why? How?

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One of the cornerstones of the Disease Maps project is the use of a shared visual standard. The standard currently used is the Process Description language of the Systems Biology Graphical Notation (SBGN). Maps drawn in SBGN can be shared as images, as vector graphics or in proprietary formats such as those of presentation software. However, such formats do not convery the semantics of the map elements, precluding further knowledge management, data integration, or easy modification. Several formats have been developed to encode the meaning of a biochemical map. Most projects of the Disease Maps community rely on CellDesigner, a software initially designed to graphically design models encoded in the SBML format. CellDesigner encodes the graphical elements using its own extension of SBML. More recently, the SBML community has published two packages extending the format to encode map layouts and rendering their elements. Finally, the SBGN community has developed its own XML language, SBGN-ML, to encode and share the maps. One can use the three solutions to successfully encode valid SBGN maps, and exchange them between tools. We will introduce the various formats, discuss their similarities and differences. We will present example of use with supporting software, and discuss in which situations some solutions are preferable and why.