OpenPCells

Writing Custom Exports

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This is the official documentation of the OpenPCells project. It is split in several different files for clarity. This document provides an overview of the creation of custom export types. If you are looking for a general overview of the project and how to use it, start with the user guide, which also contains a tutorial for getting started quickly. If you are looking for a guide and documentation on the creation of parametrized cells, consult the celldesign manual. If you want to now more about the technical details and implementation notes, look into the technical documentation.

1 Overview

Exports in openPCells work by defining functions that write specific shapes/objects such as rectangles or polygons. The functions that need to be defined follow closely the way layouts are represented in opc. Some functions (such as writing rectangles) are elementary and are mandatory, other are optional (such as functions dealing with cell hierarchies). The calling environment of an export makes sure to reduce the layout to a representation that the export can understand (for example flattening layout hierarchies). In total, 16 different functions can be defined, but only 4 are mandatory.

In the following, all export functions (mandatory and optional) will be discussed in detail and some basic best practices regarding the writing of export types will be given. All viewings of export types will be focused on lua exports. C exports follow a similar fashion, but have more freedom in their processing of output data. The specific differences are shown in section 3.

2 Export Functions

2.1 initialize

2.2 finalize

2.3 get_extension

2.4 get_techexport

2.5 set_options

2.6 at_begin

2.7 at_end

2.8 at_begin_cell

2.9 at_end_cell

2.10 write_rectangle

2.11 write_triangle

2.12 write_polygon

2.13 write_path

2.14 write_cell_reference

2.15 write_cell_array

2.16 write_cell_port

3 C Export Specialities