parameter values, select particular sub-circuits from the appropriate sub-circuit sets (e.g., for each functional circuit component), and perform some or all of the processing for combining the sub-circuits to form a circuit schematic for a corresponding functional circuit component, for example. Referring again to Fig. 5, C1_Params_1 invoke one rule set for selecting sub-circuits 411, 412, and 413 from set 410, which when combined form circuit schematic 406A. Similarly, C2_Params_1 invoke a second rule set for selecting sub-circuits 421, 422, 423, and 424 from set 420, which when combined form circuit schematic 407A. Likewise, C3_Params_1 invoke a third rule set for selecting sub-circuits in subsetA 431A from set 430, which when combined form circuit schematic 408A. Finally, CN_Params_1 invoke a yet another rule set for selecting sub-circuits in subsetB 441A from set 440, which when combined form circuit schematic 409A.

[00117] In one example embodiment of generator 501, a circuit specification is generated and provided to an EDA tool. The circuit specification may specify sub-circuit schematics and pin connections to form a combined circuit, for example. For example, a circuit specification may describe the sub-circuit schematics used to form a circuit as well as the connections between various sub-circuit schematic nodes, for example. In some example embodiments, the circuit specification may include identifiers (e.g., cell names or instance names) for particular sub-circuit schematics to be included in the circuit. The circuit specification may further include descriptions of how pins of the sub-circuit schematics are connected (e.g., a pin map described below). As described in more detail below, one example circuit specification is a netlist, such as Verilog.v, for example. The EDA tool may receive the circuit specification, retrieve the specified sub-circuit schematics based on the circuit specification, and generate a transistor level circuit schematic comprising selected sub-circuit schematics.

[00118] Fig. 6A illustrates another example block diagram of an automated circuit generator according to another embodiment. In this example, generator 609 includes program code to determine functionality 610, apply rules 612-613, retrieve sub-circuit schematics 614, and connect sub-circuit schematics 615. For example, when the process starts, determine functionality block 610 may, for example, evaluate one or more received parameter sets and determine which rule set to apply (e.g., a comparator rule set, an oscillator rule set, or a voltage reference rule set). Generator 609 may invoke one of the appropriate rule sets 612-613. An example rule set is illustrated at 620. In this example, the rule set 620 may include a sub-block 621 (e.g., of code) to retrieve the parameter values, a sub-block 622 to

CLAIMS

1. A computer-implemented method of generating a circuit comprising:

generating a circuit specification, said generating the circuit specification comprising:

receiving parameters specifying the circuit to be generated;

selecting, based on the parameters, predefined sub-circuit schematics to be included in the circuit;

determining, based on the parameters, connections between the predefined sub-circuit schematics;

generating the circuit specification for the circuit to be generated specifying the sub-circuit schematics and the connections between the predefined sub-circuit schematics; and

generating a layout script associated with the circuit to be generated; and

converting the circuit specification into a circuit schematic and a circuit layout, said converting comprising:

selecting predefined sub-circuit schematics specified in the circuit specification;

connecting the predefined sub-circuit schematics to form the circuit schematic;

converting the circuit schematic into a plurality of layout instances; and

positioning the layout instances based on the layout script associated with the circuit to be generated to produce the circuit layout.

2. The method of claim 1, wherein the predefined sub-circuit schematics comprise predefined analog sub-circuit schematics.

3. The method of claim 1, wherein the parameters specify one or more functional circuit components, and wherein the one or more functional circuit components have corresponding predefined sub-circuit schematics.

4. The method of claim 3, further comprising generating one or more symbols corresponding to the one or more functional circuit components, wherein the symbols encapsulate the selected predefined sub-circuit schematics.

5. The method of claim 1, wherein the layout script comprises a plurality of layout placement instructions.

6. The method of claim 1, wherein the layout script is configured to position layout instances from a plurality of circuit schematics.

7. The method of claim 6, wherein the plurality of circuit schematics are associated with the same functional circuit component.

8. The method of claim 1, wherein said generating a circuit specification is performed on a first software system and said converting the circuit specification to a circuit schematic and a circuit layout is performed on a second software system.

9. The method of claim 8, wherein the second software system is an electronic design automation software system.

10. The method of claim 1, further comprising:

fabricating a physical circuit based on the produced circuit layout.

11. The method of claim 10, further comprising:

packaging the fabricated physical circuit.

12. A computer system for generating a circuit comprising:

one or more processors; and

a non-transitory computer-readable storage medium having stored thereon computer executable instructions, which when executed by the computer system, cause the computer system to perform a method comprising:

generating a circuit specification, said generating the circuit specification comprising:

receiving parameters specifying the circuit to be generated;

selecting, based on the parameters, predefined sub-circuit schematics to be included in the circuit;

determining, based on the parameters, connections between the predefined sub-circuit schematics;

generating the circuit specification for the circuit to be generated specifying the sub-circuit schematics and the connections between the predefined sub-circuit schematics; and

generating a layout script associated with the circuit to be generated; and

converting the circuit specification into a circuit schematic and a circuit layout, said converting comprising:

selecting predefined sub-circuit schematics specified in the circuit specification;

connecting the predefined sub-circuit schematics to form the circuit schematic;

converting the circuit schematic into a plurality of layout instances; and

positioning the layout instances based on the layout script associated with the circuit to be generated to produce the circuit layout.

13. The computer system of claim 12, wherein the parameters specify one or more functional circuit components, and wherein the one or more functional circuit components have corresponding predefined sub-circuit schematics.

14. The computer system of claim 13, further comprising generating one or more symbols corresponding to the one or more functional circuit components, wherein the symbols encapsulate the selected predefined sub-circuit schematics.

15. The computer system of claim 12, wherein the layout script comprises a plurality of layout placement instructions.

16. The computer system of claim 12, wherein the layout script is configured to position layout instances from a plurality of circuit schematics.

17. The computer system of claim 16, wherein the plurality of circuit schematics are associated with the same functional circuit component.