

# IPL 1.0 FAQ

## What's IPL 1.0 standard?

The IPL 1.0 Standard documents methodologies and flows that enable the creation of interoperable PCells when using EDA tools based on the Si2 OpenAccess Standard. It employs the OpenAccess database and data model from Si2; Ciranova's Python-based PyCells™ and free PyCell Studio™ software; and features an interoperable text-based CDF definition and interoperable Tcl callback definitions.

## Who will use this standard?

Silicon foundries will use the standard to aid in the creation of PDK's. EDA vendors will use the standard to aid in the development of EDA tools so that they are able to read and utilize the PDK's delivered by the silicon foundries. IDMs and fabless design companies will use the Standard to create interoperable PCell libraries.

## What's in the download?

IPL 1.0 90nm reference iPDK download package - available for public download at [www.iplnow.com](http://www.iplnow.com)

- iPDK developer's guide
- Generic 90nm interoperable OpenAccess-based process design kit (iPDK) including source code
- Generic 90nm OpenAccess-based reference design
- User guide

## What are the EDA tools validated the IPL 1.0 reference kit?

This reference kit was developed and validated using:

- ✓ Synopsys® Galaxy Custom Designer™
  - Custom Designer: D-2009.12-3
  - PyCell Studio: 4.3.3, 4.3.4
  - OpenAccess: 22.04.47
  - Platform: amd64 RHEL 4.0 U6
- ✓ SpringSoft Laker™ Custom Layout System
  - Laker Version: OA2010.02
  - PyCell Studio: 4.3.3
  - OpenAccess : 22.04.54
  - Platform: intel RHEL5.2
- ✓ Ciranova Helix™ Custom and Analog Floorplanner/Placer
  - Ciranova Helix Version: 1.8.6
  - PyCell Studio: 4.3.4
  - OpenAccess : 22.04..28
  - Platform: RHEL 3 Linux32 and Linux64.

## Does the IPL 1.0 reference kit work in Cadence Virtuoso 6.x?

Cadence is not a member of the IPL and therefore we cannot validate the reference kit in their tools. However, users have done validation of the reference kit in 6.1.3 and extensive validation of the IPL standard technology using SKILL CDF and Callbacks.

## What is a Process Design Kit (PDK)?

A PDK is a set of files, typically developed by a IC chip manufacturer (foundry or IDM), that describes the process specific information that must be used by EDA tools for the design of integrated circuits of all types. PDKs are particularly important in the design of analog/mixed signal integrated circuits and the development of digital design libraries.

## What is in a PDK?

A process design kit contains the information needed by EDA tools to assist in the analog mixed signal design. Typically this information is provided by silicon foundries and is specific to a particular process at a particular technology node. Typically the PDK includes schematic symbols, SPICE models, rule decks with the technology that allows designs to be validated, parameterized cells, a list of parameters that specify a cell along with default values for the parameters and callbacks or evaluator code that must be run when one or more of these parameters change.

#### **How are PDK's delivered today?**

PDK's are developed by the silicon foundries and delivered as a group of interdependent files to the IP developer, EDA companies and the end users. Usually these files have been prequalified against specific EDA tools by the foundry. If the end-user's choice of tools does not exactly match those that are qualified by the foundry, then the user may be required to retool his design flow.

#### **Why is a standard needed?**

Today, a design tool defines the information that a user needs from a foundry. Typically this information is expressed in some product format specific to each tool vendor. To support multi-tool flows from different vendors, foundries must develop several PDK's that express the same information for the same technology node but is tool specific. In many cases, the end-user's tool choice is limited due to the unavailability of foundry information for a user specific tool chain choice.

#### **What's OpenPDK?**

The Open PDK Coalition was recently formed by Si2 to increase the scope of Open PDKs. Si2 and the IPL have pledged to work together to ensure that these standards are complimentary and not conflicting. Please contact Si2 for more information.

#### **What's the difference between iPDK and OpenPDK?**

The Si2 OpenPDK coalition has just been authorized by the Si2 board and has some aggressive goals to help support Open PDKs in OpenAccess so what we know about the mission of this Coalition is available on the Si2 website and Press releases, and will gain clarity in the coming months. The OpenPDK project will apparently open up additional options and PDK elements that are not on the IPL roadmap.

The IPL iPDK standard is available today and is silicon-proven at a major foundry. The technology has been extensively tested among an array of EDA vendor tools. The original proof of concept PyCell library released in 2007 has been downloaded more than 1000 times.

#### **How can I join the IPL Alliance?**

Membership is open to all EDA, Semiconductor and foundry companies. Currently there is no cost to join. Members participate in the meetings, contribute to efforts that enable interoperability, and have early access to interoperable PDK documentation and reference kits.

Please logon to [www.IPLnow.com](http://www.IPLnow.com) to join the IPL alliance and have an influence on its direction.