



## IP Highlights

- Libraries and rule decks
- Parametric Cells
- IP development kits
- IP protection
- Rapid prototyping
- Knowledge transfer
- Data management facilities spanning individual structures to wafer-level
- Open, adaptable layout technology platform

*“...In research and development, a physical layout tool must be able to quickly turnaround designs, be extensible to interface with a wide variety of tools (mask writers, direct-write electron beam lithography, external mask vendors)...”*

Agere Systems

## A powerful suite of re-use: by design

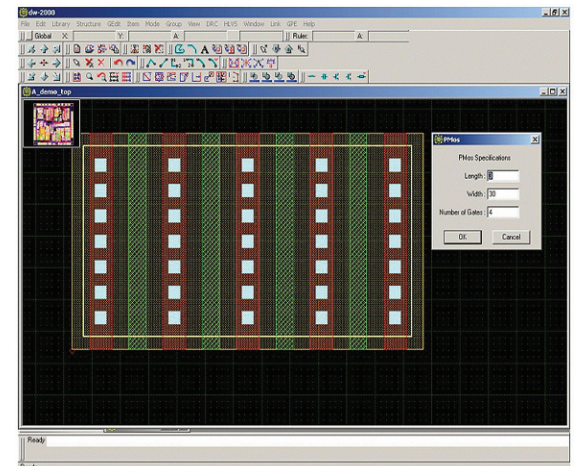
Intellectual property (IP) is a key enabling mechanism used to maximize design functionality, however, IP is more than library reuse. Increasingly, the encapsulation of design methods and the ability to rapidly prototype new functionality on a design automation platform provides a valuable productivity dimension.

The *Design Workshop Technologies dw-2000™* environment provides convenient access to a variety of proven, reusable IP through three mechanisms: layout device generators and the associated development kit; specialized element kits, such as waveguides for photonics; and customized proprietary IP, dedicated to an end user’s market needs.

### Parametric cell generators

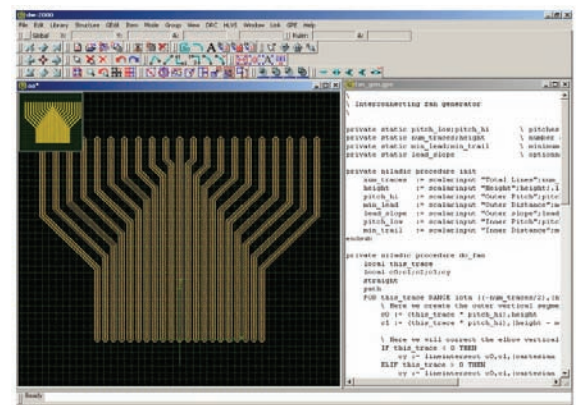
PCells are an effective means of increasing layout designer productivity by combining reuse, “what if” analysis, and correct-by-construction techniques to support design changes late in the layout phase.

This option provides a prepackaged set of device generators such as transistors. Once incorporated within a layout, the designer has the flexibility to modify the parameters on an instance-specific basis or globally for all of the instances.



### User developed generators

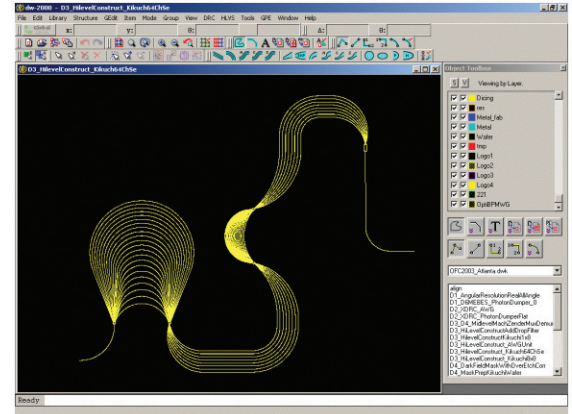
The graphical programming environment (GPE) is also available to customers who seek to create proprietary IP. Powerful hierarchical features and parametric support facilitate generator development. Support for compiled generators – GPO (GPE objects) – provides strong IP protection. The result – designers benefit from having the capability to create an unlimited range of customized PCells.





## Photonics Element Library

Our Photonic Library provides reuse and IP at a higher abstraction level. Developing complex elements, such as the curve linear structures common to planar light circuits (PLC), requires the additional consideration of manufacturing constraints. The Photonic Library provides a convenient, time saving method to maintain productivity, while considering the cyclical nature of “what if” analysis that is required by specialized devices.



“...Without dw-2000, we would not have been able to successfully prototype our high resolution waveguide structures...”

John T Chen  
E\*M Logix

### Waveguide Elements

- Polynomial
- Elliptic
- Ring
- Polygon
- Linear
- Sine & Cosine S-Bend
- Arc Bend & S-Bend
- Tapers
- Lenses

### Waveguide Highlights

- True all-angle support
- Hierarchical support
- Parameterizable
- Supports all manufacturing outputs
- Quick generation time
- Interfaces with most popular simulation software applications

## Extensible Intellectual Property

As the scope of intellectual property continues to expand, *Design Workshop Technologies* actively contributes to the orderly extension of our clients’ IP. Developers are supported by the PCell Development Kit, our powerful GPE language, comprehensive training, and professional services designed to ensure that our customers maximize the benefit of using their intellectual property.