# PDK Standards Offer High Leverage in Kit Development

## PDK Resource Savings Estimator

<table>
<thead>
<tr>
<th>PDK Deliverables</th>
<th>Redundant item</th>
<th>Qty</th>
<th>% Total effort</th>
<th>% Saved by standards leverage</th>
<th>$ Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pcells</td>
<td>languages</td>
<td>2</td>
<td>50%</td>
<td>30%</td>
<td>$1,913</td>
</tr>
<tr>
<td></td>
<td>evaluator engines</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule decks</td>
<td>EDA tool flows</td>
<td>2</td>
<td>25%</td>
<td>25%</td>
<td>$469</td>
</tr>
<tr>
<td>Tech files</td>
<td>EDA tool flows</td>
<td>2</td>
<td>15%</td>
<td>20%</td>
<td>$225</td>
</tr>
<tr>
<td>CDF / callbacks</td>
<td>EDA tool flows</td>
<td>3</td>
<td>5%</td>
<td>15%</td>
<td>$104</td>
</tr>
<tr>
<td>SPICE sockets</td>
<td>SPICE engines</td>
<td>4</td>
<td>5%</td>
<td>20%</td>
<td>$183</td>
</tr>
</tbody>
</table>

PDK development and testing resources multiply quickly – this estimator shows how the costs and savings add up. The savings gained from leveraging interoperable standards continue to scale even as NRE costs remain fixed, just as with software or IP reuse.

\[
\text{Unit Savings} = \left(1 - \left(1 - \% \text{ saved}\right)^{\text{qty}}\right) \times \left(\% \text{ total effort}\right)
\]

\[
\text{Gross Savings} = \sum_{i=1}^{5} \left(\text{Unit Savings}_i\right)
\]

### Adjust to suit user-defined assumptions

- Effort/kit (per-month): 3.00
- # Kits per year: 200
- Staffing level: 50.0
- Avg loaded $/stat. ($K): 150
- Annual baseline total cost ($K): 7,500

### Si2 Standards Participation

- Si2 dues ($K): 20.0
- OpenPDK dues ($K): 40.0
- Engineering WG time ($K): 30.0
- Annual cost ($K): 90.0

### NRE Ramp-up Expenses

- % year productivity loss: 15%
- % staff directly impacted: 35%
- Initial year NRE $: 394
PDK Development ROI
Examples

• Using frequently-cited assumptions (3p-m/kit, 200 kits/yr, $150K/yr/engr, 15-30% savings from each standard):
  – ROI in < 3 months ($2.4M)

• But now assume NO Pcell alignment / savings:
  – ROI still within 1\textsuperscript{st} year (remaining areas of savings), $500K

• Si2 sharing this PDK resource savings estimator
  – Insert your own assumptions to assess the ROI unique to your specific situation