

# W E L D

## *Web-based Electronic Design Environment*

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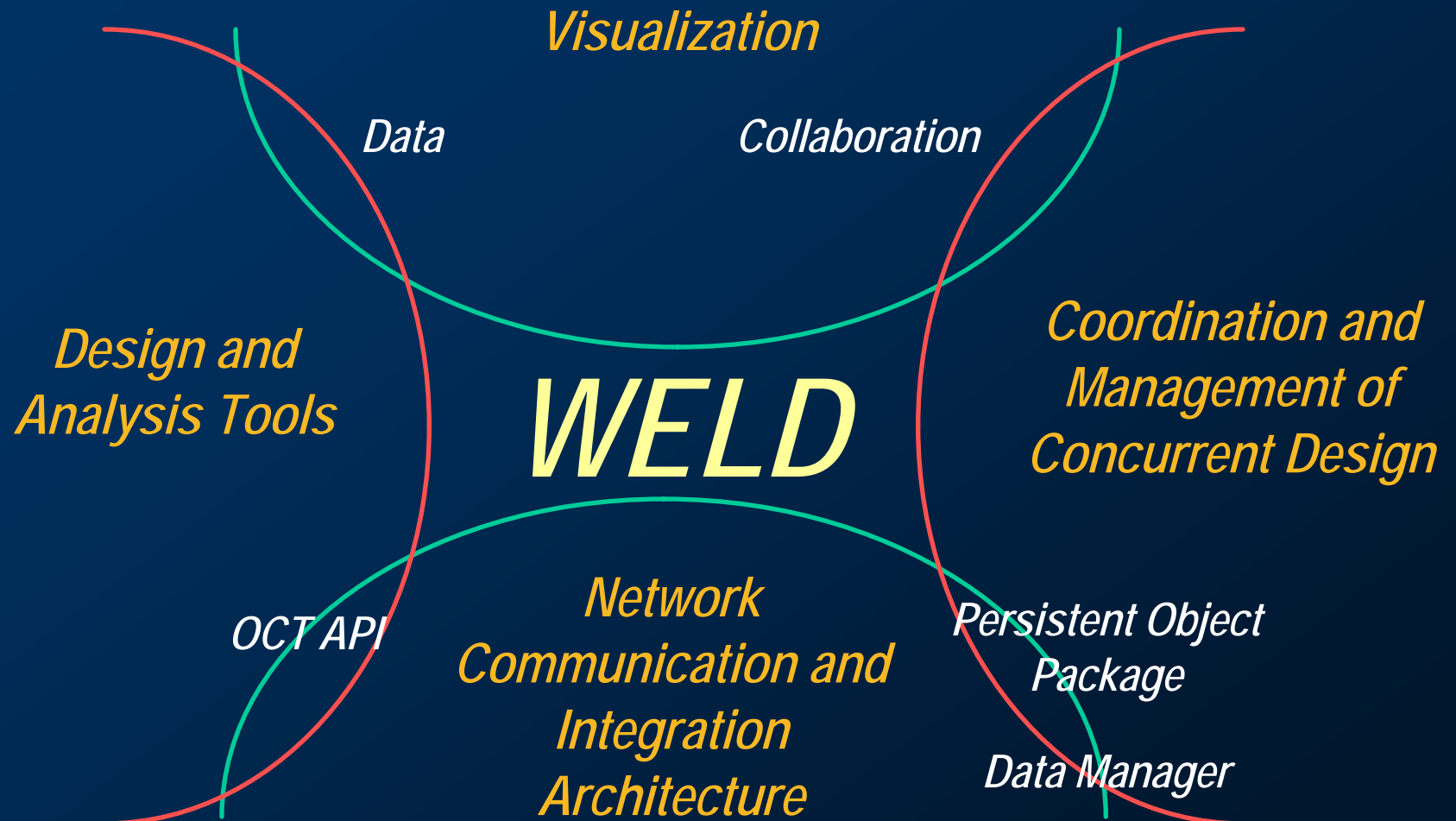
Professor A. Richard Newton

*<http://www-cad.eecs.berkeley.edu/weld>*



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# ***WELD Research Overview***



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# *Goals and Objectives*

## Architecture and Infrastructure

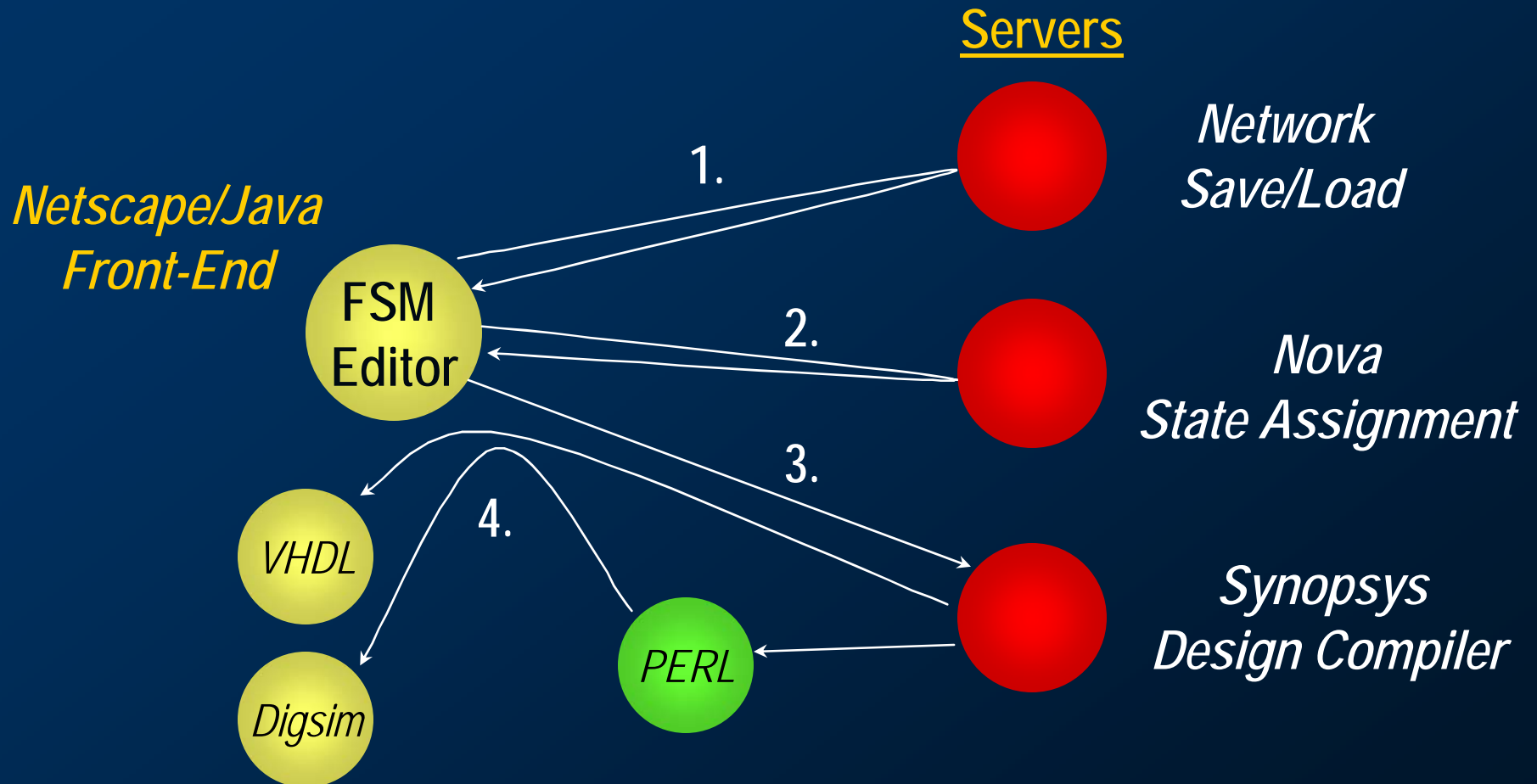
- Enable Wide-Area Collaboration
- Leverage Existing Software, Systems and Toolkits
- Scalable and Extensible

## Applications

- Design and Analysis Tools
- Information Visualization



# DAC '96 Design Flow



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# *Last Year's Demo*

📁 Simple Data Storage and Transformation

📁 Components

- Java Tool
- Legacy C Tool
- Commercial Tool

📁 Workflow using PERL and C to support Java Front-End



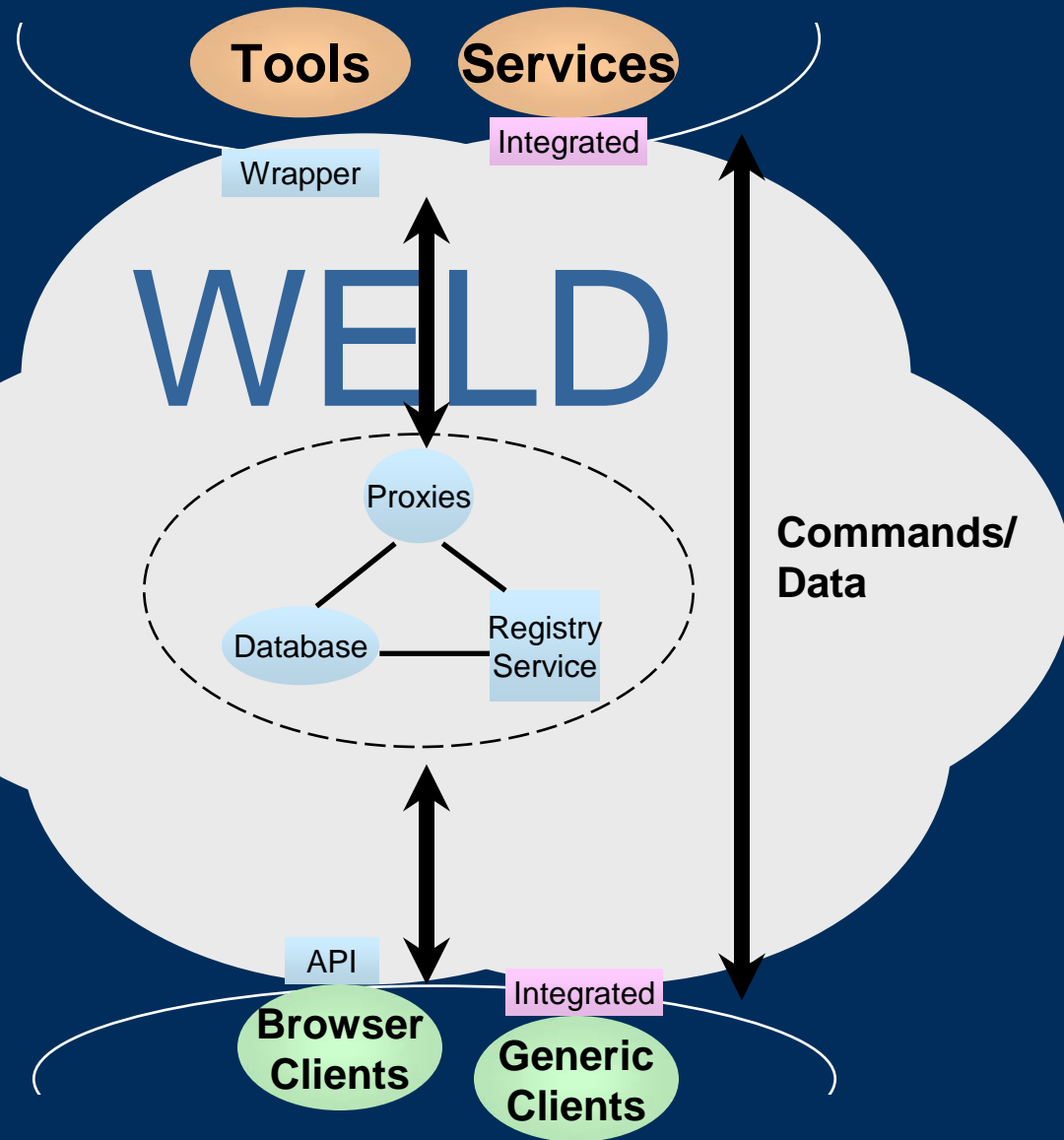
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# *WELD System Architecture*

Remote Servers

Network Services

Clients



# *WELD Infrastructure*

- 📁 Data Manager
- 📁 Java, C++ Client API
- 📁 Server Wrapper
- 📁 Communication Protocols
  - Client-Server
  - Client-Database



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# *Available Applications*

- SpecChart Editor - Java EDA Application
- Tool Flow Manager - Engineering Application
- Java-Based OCT - CAD Data Manager
- Polis, VIS, SIS, Nova - University EDA Tool
- Synopsys Design Compiler - Commercial Tool

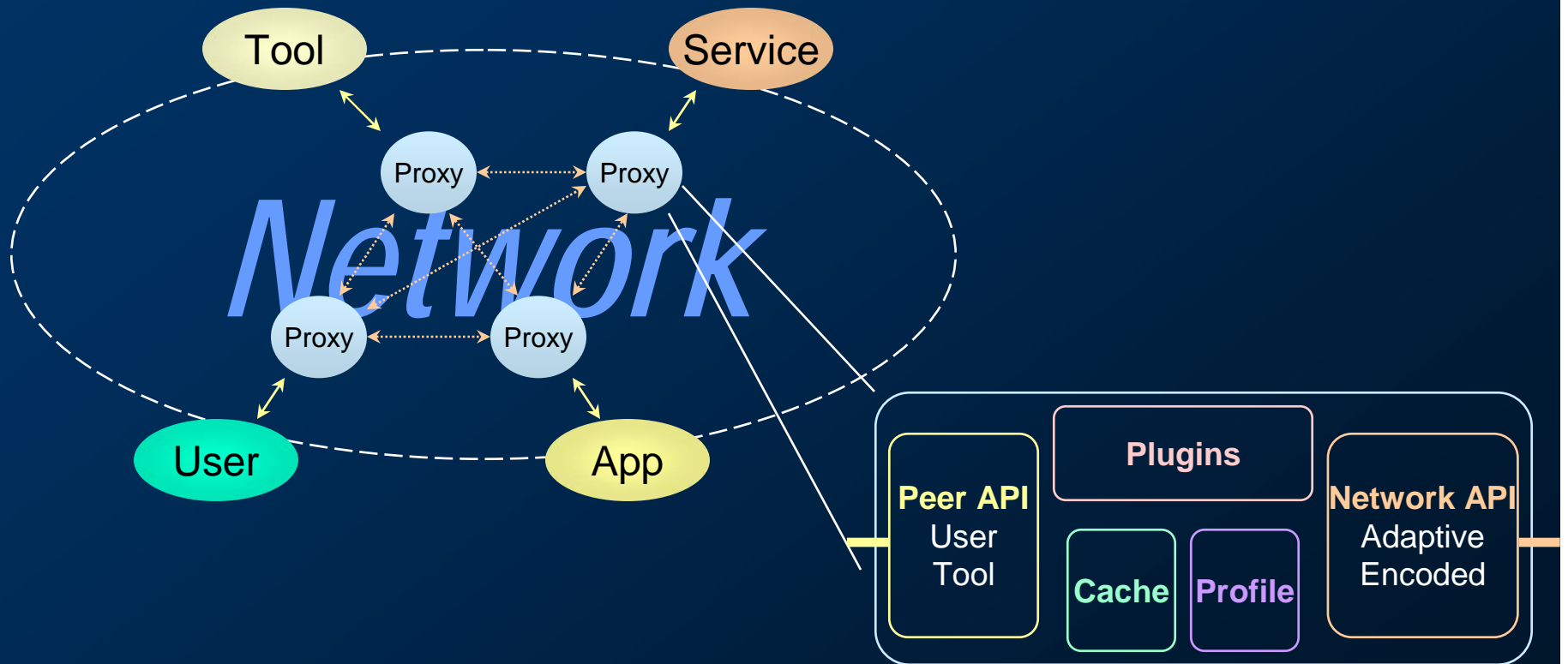


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# Future Directions

## Proxy-Based Architecture



# *DAC 97 Demos*

- ✚ SpecChart Editor
- ✚ Interactive Network-Design Session Using JavaSIS
- ✚ Distributed Tool Flow Manager

## Related Demos

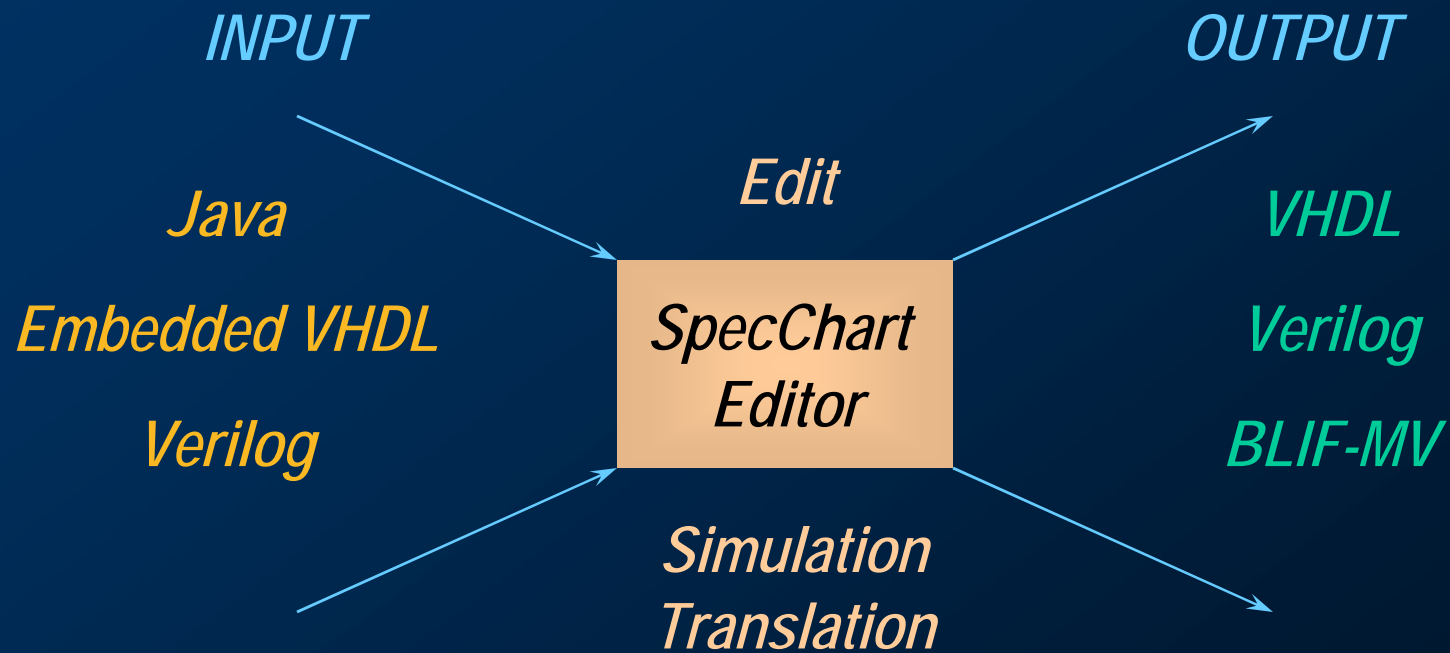
- ✚ Interactive Visualization Tools for CAD
- ✚ Web-Based High Level Estimation of Mixed-Signal System
- ✚ The TYCHO User-Interface System
- ✚ Internet Based Workflow



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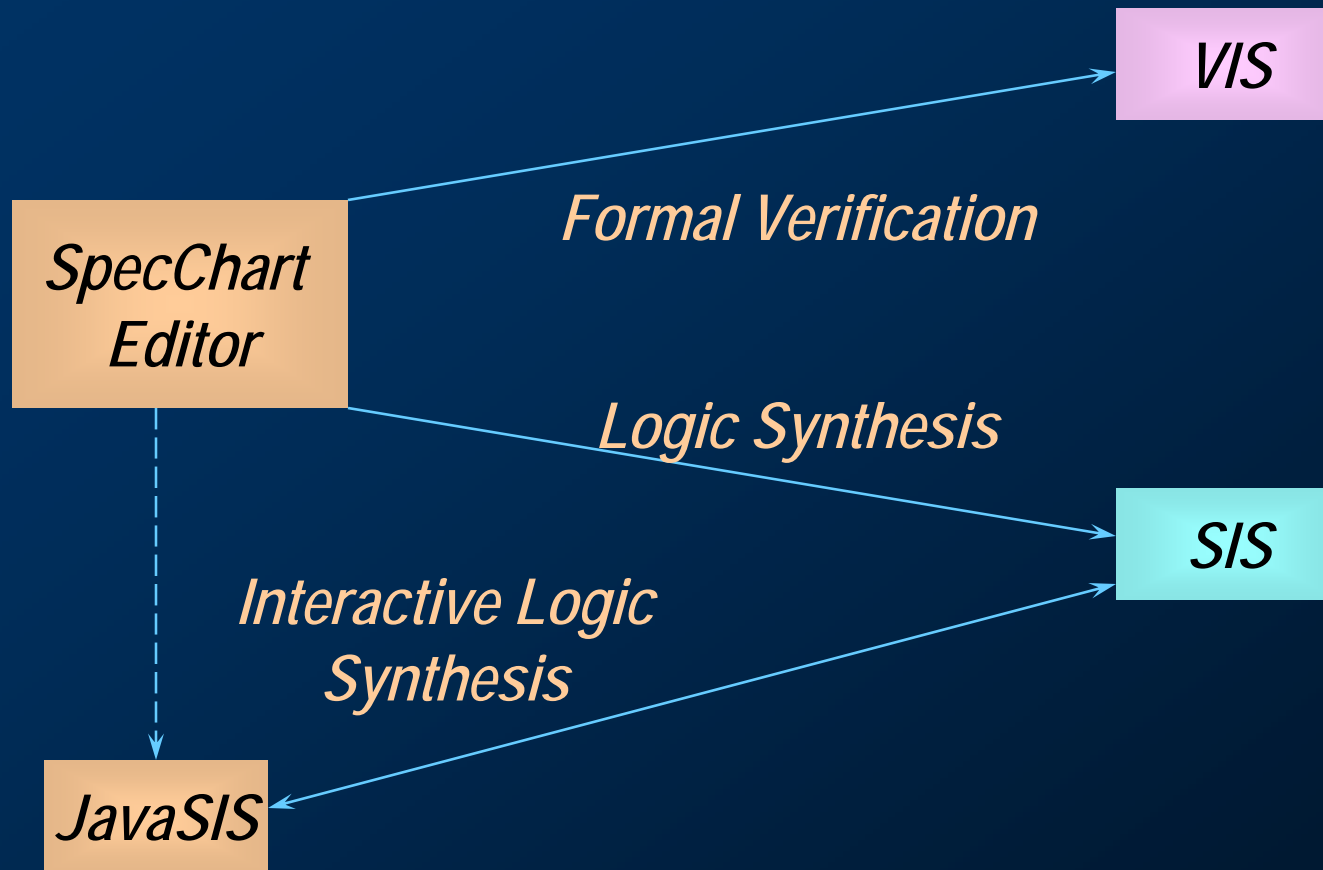
# *SpecChart Editor*

*Tool for high level hardware design.*



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# *Verification and Synthesis*



# *Distributed Tool Flow Manager*

- ✚ Automatic Registry Query for Tool Menu Construction
- ✚ Drag and Drop Tool Flow Construction
- ✚ Flexible Data Format and Parameter Entry
- ✚ Individual Tool Information
- ✚ Heartbeat Progress Update During Execution

## Tools

- ✚ Data Manager Entries
- ✚ Networked EDA Tools with Server Wrapper



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# *Demonstration Summary*

- 📄 Java-Based EDA Application
  - 📄 Distributed System Infrastructure
  - 📄 Third-Party Tool Integration
  - 📄 Tool Flow Configuration and Execution
- Mobile Interactive Design Session



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