

# Automated system assembly using existing IP library

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# You do not hand assemble your Memories

Each Memory instance is 'unique', But it is auto assembled by the memory compiler based on the following user inputs.

- Data Width
- Address Space
- Synchronous/Asynchronous
- Single Port/Two Port/...
- ...



## Then why do it for your Subsystem?

If you have all the building blocks in your IP library, The end user should be able to

- Go to a self-service portal,
- Enter requirements and
- Download the complete pre-verified subsystem.

**If it takes you 5 minutes to explain what the code does, It should not take you 5 days to implement it!**



## Example

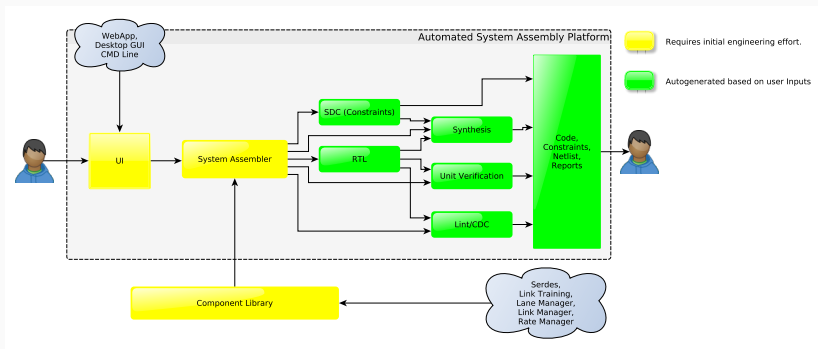
e.g. A Networking IP library will have components for the following.

- Channel Types (Cu, Fiber, Twisted Pair)
- Data Rates Management.
- Lanes → Serdes mapper.
- Link → Lanes mapper.
- Link Types
- ...

A user requirement of My Chip needs 10 Link, 100GBps per Link, 5 links interface to Fiber and 5 links to Cu. Should only require a few minutes of data entry to produce the subsystem.



# System Diagram



Automated System Assembly is based on multiple technology advancements at Dyumnin Semiconductors.

**VerilogNG** VerilogNG is a superset extension to Verilog. It supports concise representation of design logic, Native code generators, Powerful template based macro expansion, Hierarchical design configuration file etc.

**Code Generators** Generating and integrating CSR Files, AXI/OCP like interconnects, etc. from specification is natively supported by the language.

**Down Stream Generators** The design configuration information is used to produce RTL code and supporting SDC Constraints, Synthesis scripts, lint/cdc exception etc.



# History...

- Roots in S/W Industry.
- Successfully implemented for a Top 10 Semiconductor MNC.
- Similar Action initiated at an EU Datacenter.
- ...



# About Dyumnin Semiconductors

- Started in 2016 as Dyumnin Technologies.
- Recognised by Startup India (DIPP35693)
- Founder has 20 years of experience in the Industry
- Working on Design Acceleration tools, IP Design, Frontend Design Services.
- Client Profile: Datacenter, Processor Design, Test and Measurement, Cryptography, Gaming Controller. ...

