NeuralMesh™ Speeds Chip Verification, Raises Yield for Semiconductor Fabrication

WEKA® NeuralMesh™ serves Electronic Design Automation (EDA), lithography, and inspection AI from a single namespace with file and object access to the same data, all on-site or in any major cloud. Design and fabrication teams stop copying files between systems, cloud jobs start before a full transfer finishes, and years of inspection images and equipment records remain accessible for yield analysis.

Key Benefits of NeuralMesh in Semiconductor Fab

Keep EDA Licenses Working at Tape-Out Peak

- Run EDA 10x faster than NAS
- Free-up licenses sooner
- Protect tape-out dates

Turn Inspection Images into Yield Answers

- Keep years of images in reach
- Feed GPUs for defect checks
- Train on all your fab history

Unify Design and Fab Data on One Platform

- Share file and object access
- Serve CPU and GPU jobs alike
- Eliminate duplicate storage

Handle Millions of Small Design Files Concurrently

- Split every file evenly
- Read files 77x faster
- Run lookups in microseconds

Maintain Full Speed Through Drive and Server Failures

- Rebuild across every node
- Finish multi-day simulations
- Recover faster as you grow

Store and Tune Massive Datasets Easily

- Scale up to 14 exabytes
- Adapt to each job on the fly
- Track the cluster in Observe

Run On-Premises and Burst to the Cloud Seamlessly

- Access data where it lives
- Use AWS, Azure, GCP, or OCI
- Avoid hardware lock-in

Isolate Each Project on Shared Hardware

- Dedicate nodes to key work
- Encrypt each tenant's data
- Securely share infrastructure

17,000	50%→90%	90%	100TB	Up to 10x
EDA job sets on SPECstorage® 2020	Production yield at a leading electronics maker	Reduction in overall data-operations costs	Of sensor data, analyzed same day vs. 2+ days	Faster rebuilds as clusters double in size

Semiconductor Design and Fabrication Use Cases

Accelerated EDA Verification, Signoff and Tape-Out

NeuralMesh spreads file lookups across every server and node, so nightly regressions finish overnight and tape-out dates hold.

Computational Lithography and Process Simulation

NeuralMesh keeps lithography jobs fed and carries multi-day simulations through failures, so teams keep full model detail.

Wafer Inspection, Defect Detection and Yield Analysis

NeuralMesh feeds live floor data and fab history to inspection AI that flags deviations in real time and speeds root-cause work.

Hybrid Cloud Design and AI-assisted Engineering

NeuralMesh presents design data in the cloud almost at once, so burst jobs start early and archives answer as fast as live work.

> “For the same hardware, [WEKA] can deliver data faster, thus allowing you to feed more of these GPUs and fill their memory just in time for you to do the processing... You need to have a higher and higher transferring speed... The source is of course the storage system that needs to be capable of actually delivering all this data at the right speed.”
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> — VP of Artificial Intelligence, Fortune Global 500 Electronics and Semiconductor Company

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