

From Specs to Masks...

Automated Multi-Chip Assembly GOTmuch

AUTOMATION

Automates mask floorplan creation with use of reusable templates. Generates compatible step plans for all the masks in the mask set.

OPTIMIZATION

Calculates optimized step plans so chip production in increased and / or manufacturing shots are minimized.

VERIFICATION

Verifies consistency between masks in the mask set and presence of all layers needed for the order form .

CUSTOMIZATION

Adapts user experience to fit existing customer flows with minimum disruption and maximum efficiency.

Intuitive assembly design environment

Automated multi-chip assembly placement

Optimized customer deliveries

Production-aware placement engine

Automatic dummy fill insertion

Mask manufacturability verification

Automatic documentation generation

Customizable with Python API and SQL support



Advanced manufacturing, packaging, and inspection technologies - 3D-IC, Stitching, MPWs, PCMs, Multi-Patterning, CMP... - create disruptions, bottlenecks, and inefficiencies in existing Mask Data Preparation flows, highlighting the need for innovative solutions automating processes from specs to masks.

XYALIS transforms Mask Data Preparation with end-to-end automation and reduces engineering time by up to 40-70% while improving quality and cutting silicon usage by 10-15%.

"XYALIS customizable solution addressed bottlenecks and inefficiencies in our existing MDP flow with their specialized engines and domain expertise".

Multi-chip assemblies, also known as Multi-Project Wafers or shuttles, are becoming more prevalent in order to share mask costs between projects, and are used for test chips, prototypes, or low production chips.

GOTmuch is a powerful workbench for creating multi-chip assemblies, increasing productivity and eliminating the risk of errors by automating all the steps of the process: input integrity checking, automated placement, assembly wide dummy fill insertion, and assembly layout database generation.

GOTcross, an optional advanced placement engine considers production requirements (deliverability, packaging, production outcome) and optimizes the placement solution.



ESSENTIAL COMPANION TOOLBOX

Set of layout processing tools provide a safe transfer to silicon for the most complex SOC designs.

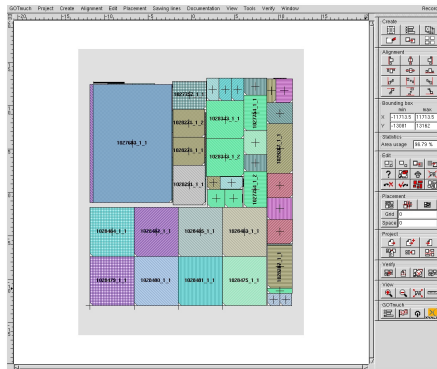
STANDARDS SUPPORT

XYALIS Mask Data Preparation solution supports standard layout and job deck formats: GDSII, OASIS®, OASIS.MASK, MALY, MEBES.

SYSTEM REQUIREMENTS

Runs on any Linux workstation with RedHat 7 to 9. Management of multi-core is automatic

Features and Benefits



INTUITIVE ASSEMBLY DESIGN ENVIRONMENT

The intuitive customizable graphical environment can be used to quickly build multi-chip assemblies with manual or automatic placement. It is also the cockpit of XYALIS Mask Data Preparation solution, from where users can launch the different engines necessary to build mask sets and visualize the results.

AUTOMATED MULTI-CHIP ASSEMBLY PLACEMENT

An automated placement engine builds in seconds an assembly optimized for area, optionally placing chips according to user defined properties, such as packaging type, design team, end-customer, etc... fully compatible.

OPTIMIZED CUSTOMER DELIVERIES

GOTmuch placement engine places chips sharing the same criteria so that they can be retrieved independently after manufacturing.

PRODUCTION-AWARE PLACEMENT ENGINE

GOTcross, an optional advanced placement engine considers packaging requirements (saw line width, guard rings...) as well as expected chip production outputs to drive placement. Users control optimization criteria by weighing area minimization, the number of cut sets, and optimized customer deliveries.

AUTOMATIC DUMMY FILL INSERTION

To increase manufacturing yield, GOTmuch inserts dummy tiles of full layer structures in empty areas of the assembly to help flatten the surface of each layer before Chemical Mechanical Polishing (CMP).

MASK MANUFACTURABILITY VERIFICATION

A design database integrity checker combined with an assembly rule checker warrant that the generated assembly is free from errors. Special checks are carried out to ensure that the final mask set database can be handled with no problem by any mask shop, manufacturing, and inspections teams.

AUTOMATIC DOCUMENTATION GENERATION

User documentation, generated by the click of a button, is fully customizable for use by mask shops, manufacturing, and inspection teams.

CUSTOMIZABLE WITH PYTHON API AND SQL SUPPORT

XYALIS MDP solution is fully scriptable, with Tcl/Tk or Python API, and includes a built-in SQL connector to any DB, for easy inclusion in any existing customer flow.

GOT ENGINE

Handles the largest designs with maximum performance and minimum memory requirements thanks to the GDS & OASIS (GOT) data representation engine, tailored to leverage native OASIS.MASK optimizations.

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