

# IC Layout finishing software

## Mask and Field Assembly



### PRODUCTIVITY

XYALIS GTmask intuitive flow and powerful automation cuts mask set assembly time.

### SECURITY

Checks are performed at each step of the mask and field assembly flow ensuring error free database and mask order.

### RELIABILITY

XYALIS mask and field assembly solution has been used in production by leading edge semiconductor companies for several years.

### AUTOMATION

XYALIS GTmask is fully integrated in XYALIS Mask Data Preparation solution and can be scripted to run smoothly without human intervention in production mode.

### PORTABILITY

XYALIS GTmask supports standard layout and job deck formats: GDSII, OASIS, MEBES.

- Automated field placement with reusable templates
- Support for Multi Layer Reticule and Multi Scan technologies
- Optimized 1X mask flow
- Automated creation of compatible step plans and wafer maps
- Mask manufacturability verification
- Automatic documentation and database merging
- Essential companion toolbox

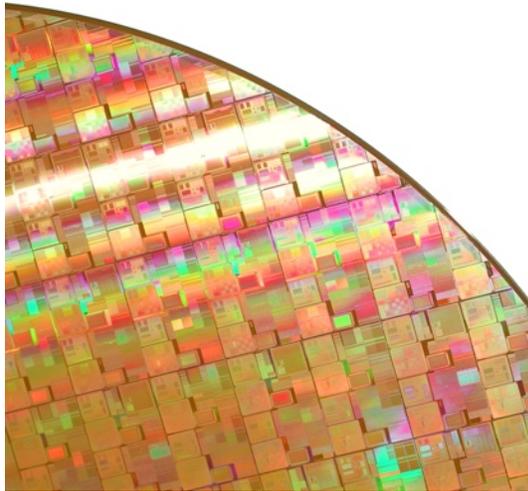
As the cost of a complete mask set has dramatically increased and now represents a significant part of the overall project cost, it is critical for design teams, mask data preparation teams, and mask shops to implement a robust and repeatable Mask Data Preparation flow, which increases the productivity of the mask set creation and removes any risk of error.

XYALIS GTmask automates the assembly of mask sets, including support for new technologies such as Multi Layer Reticules (MLRs), Multi Scan masks, back side masks, and full wafer, or 1X, masks, independently of the targeted mask shop or mask making equipment. It ensures that all masks in the mask set are compatible and optimizes the step plans and wafer maps.

By automating a repetitive and error prone process and by verifying the manufacturability of the resulting mask set, XYALIS GTmask increases the productivity of the mask data preparation team, avoids costly delays at the mask shop, and prevents the manufacturing of faulty mask sets.



# Features and Benefits



## ESSENTIAL COMPANION TOOLBOX

XYALIS offers a set of software dedicated to large layout database manipulation and update that can process even the largest GDSII and OASIS database, with the highest processing speed available, to provide a safe transfer to silicon from the most complex SOC designs, recommended in every tape-out sign-off flow.

## SYSTEM REQUIREMENTS

Software runs on any Linux workstation with RedHat 5 or above. Management of multi-cores or multi CPU is automatic. A MacOSX version is also available. Binaries for other platforms may be provided upon request.

## INFORMATION

For more information on any of our products or services please visit us on the Web at: [www.xyalis.com](http://www.xyalis.com) or mail to: [sales@xyalis.com](mailto:sales@xyalis.com)

- **Automated field placement with reusable template**

The different elements constituting the mask: fields, alignment and inspection marks, barcodes... are assembled on the mask using a dedicated graphical environment or reusable scripts. Default settings allow for most common mask assembly practices but can be customized to match specific procedures and placement can be manually modified.

- **Support for MLRs and Multi Scan technologies**

New mask manufacturing technologies, such as Multi Layer Reticule and Multi Scan technologies aim at reducing the cost of mask sets by using a single mask for printing several reticules. XYALIS GTmask streamlines the instantiation of multiple fields on the mask by automatically positioning the fields. XYALIS GTmask also offers support for backside masks.

- **Optimized 1X mask flow**

XYALIS GTmask offers a specific flow for full wafer masks, or 1X masks, which optimizes the field placement in order to maximize the number of chips on the 1X mask or minimize the number of shots necessary to produce the chips. This flow accommodates multi-chip masks: different fields can be instantiated on the full wafer mask, including very large chips whose size extends beyond the normal boundaries of the field. To improve wafer planarity and increase manufacturing yield XYALIS GTmask offers wafer level dummy fill.

- **Automated creation of compatible step plans and wafer maps**

XYALIS GTmask automates the creation of the step plan for each mask of the mask set. It optimizes the reticule placement in order to maximize silicon usage or minimize manufacturing time, or a trade-off of both, while taking into account protected zones on the wafer. It is possible to manually fine tune the step plan. A Mix and Match function ensures that all step plans and the wafer map are fully consistent and generate any missing wafer layout.

- **Mask manufacturability verification**

A design database analyzer combined with an assembly rule checker warrants that the mask data is free from error and can be manufactured. Special checks are carried out to ensure that the final mask set database can be handled with no problem by mask shop and manufacturing processing and inspection tools.

- **Automatic documentation and database merging**

User documentation is generated by the click of a button. Format and available information are customized through a plug-in mechanism. Final layout data is generated as a single database or multiple databases that can be adjusted to offer the best trade-off between job deck complexity and file size.



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