

## Extending the industry's premier defect management to your process tools

### Enabling an important new stream of real-time defect information from your fab

This innovative new capability is called ProcessGuard Xtensis (PGX), because it extends the power of ProcessGuard to fab tools that previously were unable to detect defects.

It begins with Microtronic's exclusive new Trans-Imager software module which can take high-resolution wafer images directly from processing equipment in the fab – and automatically detect and display macro process defects in real-time. It then transfers all of this information into the powerful ProcessGuard software which provides extensive defect management and analysis.

### Monitor defectivity from many additional tools

The Trans-Imager can link to a number of different types of processing equipment, such as bonders, etchers, back-grinders, metal deposition, CMP, and more. And if a particular tool does not already have an internal high-resolution camera, Microtronic can install one.

And in addition to processing equipment, the Trans-Imager can also accept images from SEMs and optical microscopes, which

can make it easier than ever before to organize, file, store, and retrieve large numbers of images.

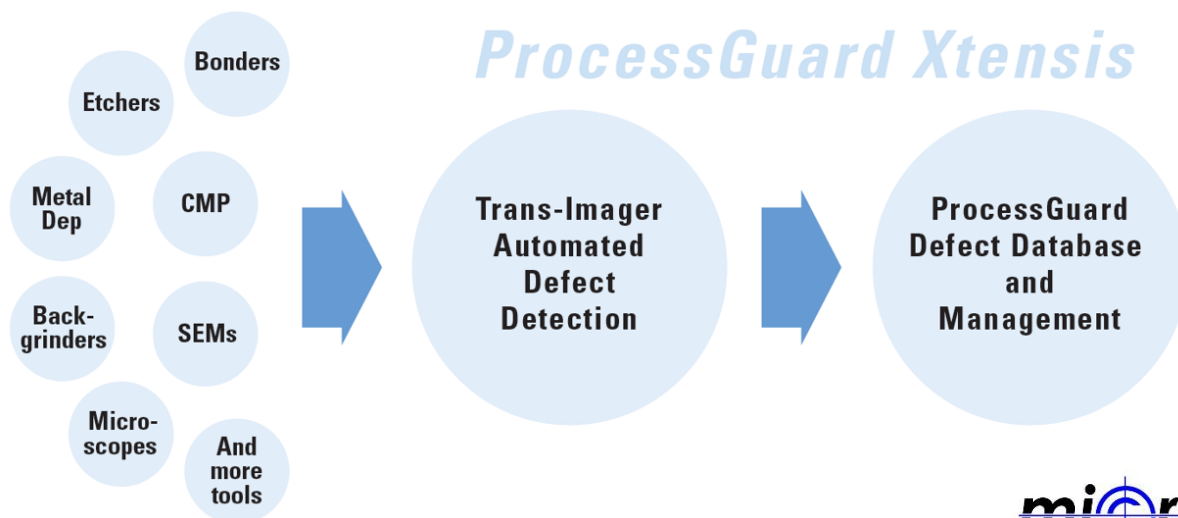
### Real-time excursion control

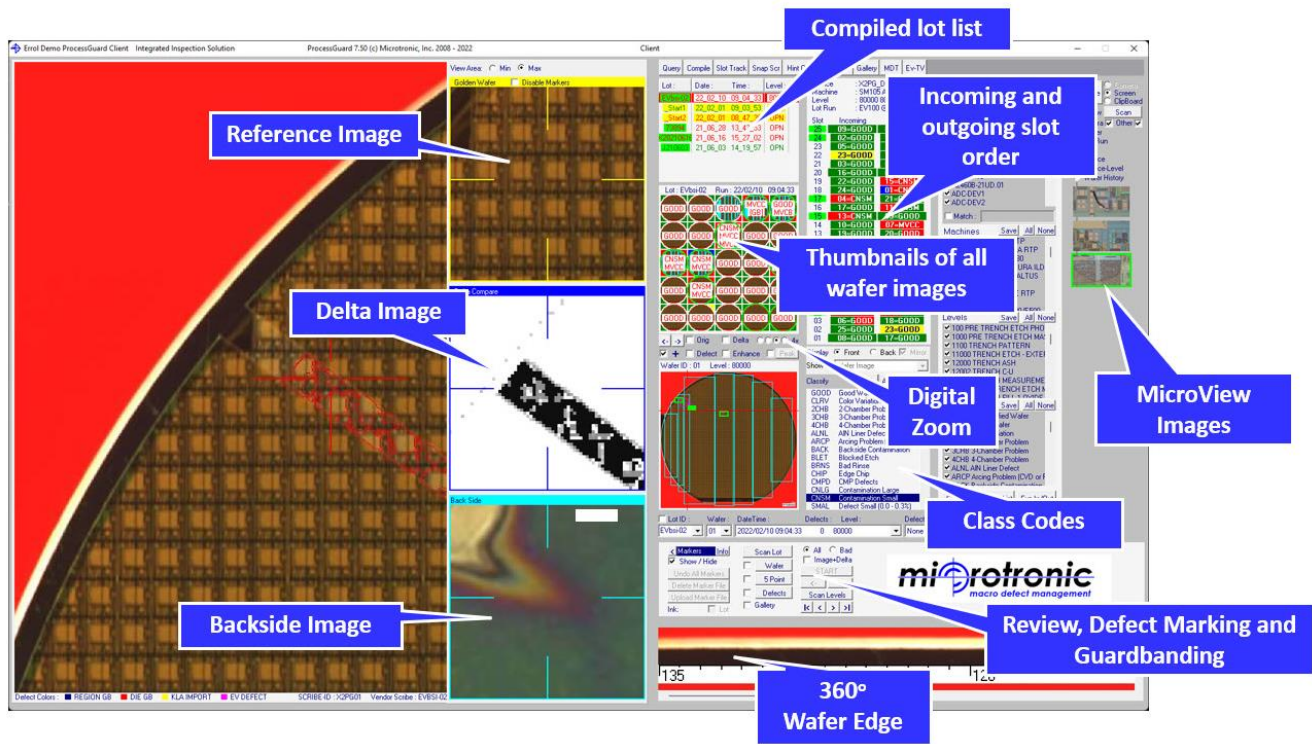
With real-time defect detection, users can spot excursions immediately and take corrective actions quickly, to minimize scrap and maximize yield. And getting defect information earlier in the processing sequence can also allow users to enhance device reliability by applying guardbanding around selected defect areas, to ensure that potentially marginal die do not reach the customer.

### PGX = much more defect information

ProcessGuard Xtensis stores everything in its comprehensive database, which provides a means of integrating and managing all of the fab's inspection processes and defectivity information. This defect data is then readily available to the entire fab and enterprise – searchable by tool, date, time, lot, wafer, and more. So, even months later, specific process issues can be quickly and easily investigated.

ProcessGuard is already in use around the world, having managed defect data for hundreds of millions of wafers. It is a proven, high-volume defectivity management solution that is now made available to many more processing tools.

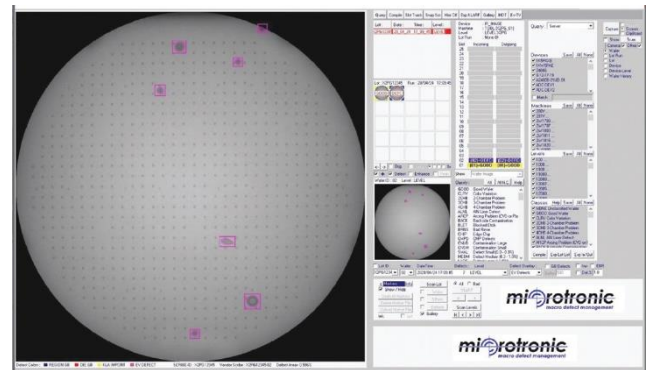




## Powerful defect information, clearly presented

A typical ProcessGuard user interface screen (shown above) can present a wealth of defect information, including wafer images, defect lists and maps, wafer tracking, and much more. Interface and application features are very flexible and can allow special query screens to fit individual needs. For example, a user may choose to look at all macro images and associated data for a specific tool, level or device.

*The ProcessGuard Xtensis screen at right shows defect data brought in directly from a wafer bonding tool in the fab.*



## ProcessGuard Advanced Capabilities

- Advanced wafer image processing and visualization
- Integrated user-definable defect library
- Integrated historical data for lot and equipment
- Easy drill-down Pareto for root-cause analysis
- Customizable user interface, customizable query screens
- Sort by class code, tool, operation, time, or device
- Import additional data/images into the macro database
- MicroView – integrated microscope images
- Backside Inspection – integrated backside wafer images
- Guardbanding capability for each wafer
- Automated wafer randomization analysis
- Edge bead removal review (EBR)
- Export KLARF files
- Integrated trainer and knowledge base
- Enterprise-wide full defect information access
- And a great deal more...

