

ErgoTech Systems, Inc.

TransSECS Application Note: Recipe Management

THE PROBLEM

The cost of processing a wafer with the wrong recipe can be very high – for example, as high as \$150,000 per tool per year for each of four problematic etchers in one fab. The solution is quite simple -- check the recipe against the lot before processing and either download the correct recipe or stop the processing of the wafer. TransSECS can be used to rapidly create host applications such as recipe management, with database access and SECS message generation for communication to your process equipment

THE SOLUTION

Ideally the fab host would be modified to instigate a recipe check. In reality, making such changes to a fab management system can be involved and expensive, and certainly could disrupt the operation of the entire fab. Using TransSECS you can create an application that resides between the equipment and the host, which watches the process and performs without impacting the host application. TransSECS can monitor SECS messages, extracting data from them without altering the messages sent to the host.

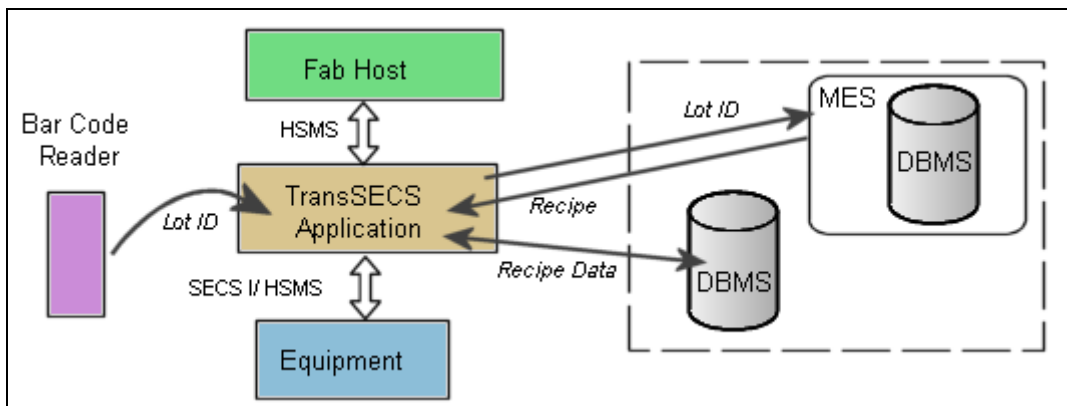
TransSECS can build SECS messages from databases, from other messages, or with data from automation devices. You can even use it to add capabilities that are missing from the original SECS interface; for example, you can convert SECSI links to HSMS, or add GEM capability -- TransSECS handles the GEM interface, translating and passing the appropriate messages to the tool

An example of a TransSECS recipe management application is shown in the diagram below. ErgoTech's factory automation data access components are fully integrated with TransSECS and allow direct access to industrial devices such as PLCs, controllers and serial devices (such as the barcode reader in this example).

TransSECS reads the Lot ID from the wafer cassette barcode and uses that to query the MES or any database system for the PPID of the recipe that should be run on the wafers. It then selects the recipe or queries the recipe database for the recipe data and, if necessary, downloads the correct recipe. The application's Web-based user interface allows recipes to be retrieved from the tool and stored in the recipe database. It also allows the user to override the recipe/Lot ID handling to process special wafers such as test or development wafers.

The application logic and Web-based graphical user interfaces (GUIs) can be built entirely graphically with the TransSECS tool-set. The component-based architecture allows any level of complexity to be handled by adding custom JavaBean components as needed. The application can be deployed to a range of systems, include PCs and workstations, or ErgoTech can provide pre-configured, embedded, fab-ready PCs.

Solving simple but annoying problems, such as these can have a fast ROI and quickly cut costs. TransSECS is an adaptable and cost effective tool for creating these solutions.



Example TransSECS Recipe Management Application