

Rule Based Routing as Workstream AddOn

RBR IN THE SEMICONDUCTOR INDUSTRY

Benefits

- ✓ Reduced Metrology Costs
- ✓ Full Redundancy
- ✓ High Performance with real time reaction and high trough put
- ✓ User Based Security
- ✓ Low Impact on Work-Stream
- ✓ Unmanned Operation
- ✓ Transparent Decision Path

Faced with continued demands for cost reduction, the semiconductor manufacturing industry is forced to seek new solutions. One way is to remove redundant metrology steps while ensuring successful process results. This kind of improvement can be achieved with the help of a flexible Metrological Sampling System like Systema RBR.

THE PROBLEM

Metrology equipment is an expensive component in any fab. There are hidden costs involved that go beyond the initial tool purchase price and the labor required for each measurement. These hidden costs include built-in additional fab cycle time, wasted clean-room space and unnecessary wafer handling. It makes sense to measure only when actually required but the rules involved are too complex or error-prone to leave such a decision to an Operator. The Systema RBR system can help limit measuring costs and yet maintain the necessary level of quality management at the same time.

THE SOLUTION

The RBR system supports numerous sample selection schemes and then simply marks lots in WorkStream to either step into or around metrology operations. Lots are marked using a WorkStream lot attribute. The decision whether metrology is required depends on lot condition as well as user defined rules. All needed context information is provided by WorkStream events.

- Time based rules e.g. 1 lot per hour
- Round Robin rules e.g. every 3rd lot
- Load based rules e.g. 3 lots out of 10
- Attribute based rules e.g. Experimental runs
- Technology rules e.g. High Tech 7 out of 10
- Product rules e.g. This prod always tests

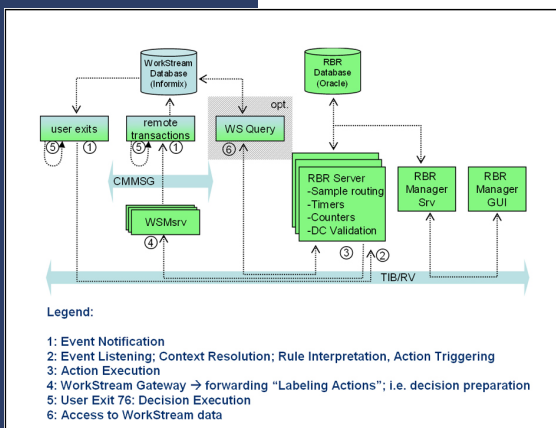
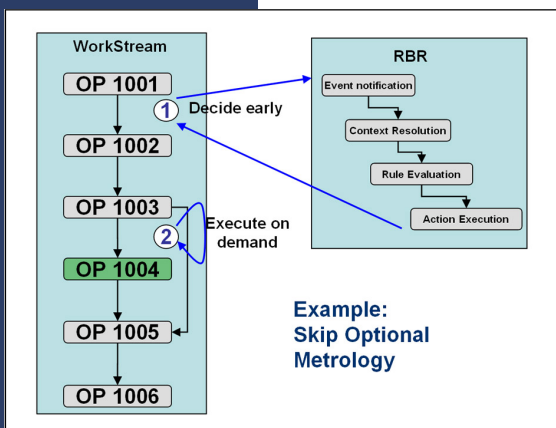
Rules are associated to contexts. Rules can react on multiple events. Rules operate on counters. Sampling Control Elements (SCE) can be Counters, Timers or Consumptions. SCE's are implemented within the rule and assigned to the same context. SCE's must have their own context and each triggering event should have its own context and function.

WORKSTREAM INTEGRATION

All required context and counter data is published to RBR from WorkStream using standard user-exit code. A simple SetLotAttribute function marks all lots to step in/around metrology steps. A user-exit on move-out automatically decides on the next operation. No Operator decision is required.

RBR CONFIGURATION

All rules and context set-up for RBR is done using an intuitive set-up GUI.



SYSTEMA Systementwicklung
Dipl.-Inf. Manfred Austen GmbH

Manfred-von-Ardenne-Ring 6
01099 Dresden
Germany
Phone +49 351 88 24 60
Fax +49 351 88 24 772

systema@systemagmbh.de
www.systemagmbh.de

