Tackling the Big Six

A strategy to meet the biggest challenges your test department will face.

Raymond Cronin

Today's test department faces many complex challenges and alternatives. In this month's column, we'1l define a strategy that can be used to sort through these issues.

The technical challenges for the test department are:

- netlist test requirements
- fine pitch and high density
- dual-sided simultaneous access
- increased impedance test requirements
- more stringent test parameters (specifications)
- computer-aided repair.

The challenges listed here, which we'll refer to as the "Big Six, " will extend into the foreseeable future.

The task for test department personnel and management is to address each of the Big Six requirements in a manner that will increase test coverage (thereby reducing escapes) while holding the line on or reducing overall costs. Many fabricators respond to this chal-Ienge by put-chasing new equipment. But all too often such a move is approached with the objective of capturing the elusive "panacea'' -that single piece of equipment that can meet the preceding challenges for every application. Such decisions are based on equipment specifications, not equip recut application.

An alternative method of decision making is to approach it from an applications perspective. **This** approach, which tends to be strategic in nature, is outlined in the following section. In future installments we'll invoke this approach to develop a framework for strategic decision making in relation to the Big Six.

Applications-Centered Decision Making

The first step is to recognize the existence of the applications gap. This is defined as the difference between the *actual* and the *potential* capability and capacity of a given process,

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At a 15-second average test time per circuit, for instance, a tester's potential capacity is 240 circuits/hlr. If the tester's actual output is less than that, an applications gap exists. Applications engineering methods can be used to increase the actual capacity to match the potential capacity.

A straightforward analysis of your test department will yield the actual and potential capabilities and capacity for each of the Big Six. Once this is accomplished, a decision can be made as to whether an increase in the actual (applications) or the potential (new equipment or process) is needed for each area of the department.

New equipment purchases and new process implementation only increase potential capabilities and capacity. Successful application of the equipment or the process is the only way to realize gains in the actual capability and capacity.

In the next installment of this column, a matrix will be presented for three of the Big Six, with the last three factors to be analyzed in a successive column. The analysis will detail the applications gap for each area and will examine the potential increases that may result from the latest equipment and processes. The analysis will lead directly to a strategic method of closing the applications gap in the short term while increasing the potential capability and capacity of the test department over the long term. FAB

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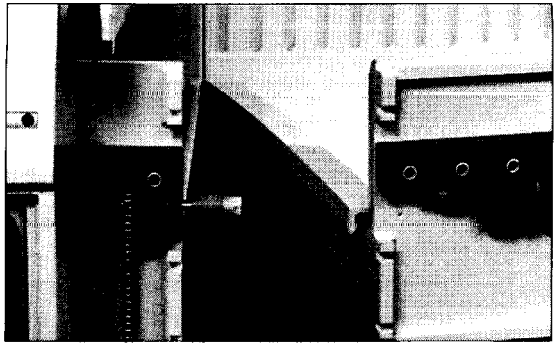
ing systems are also optimized for long life. In case of down time, complete engineering records of every system are on hand so the nature of the failure and the means of correction can be quickly determined. Needed parts are pulled immediately from stock and shipped for next-day delivery.

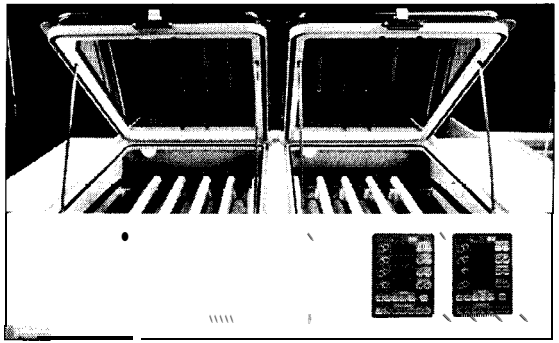
With the aid of the manufacturers' sales and engineering staffs, older wet processing systems in the field can often be retrofitted and upgraded to provide many years of additional service.

Wet Precessing Evolution

With the need for improved functionality and features constantly increasing, wet processing manufacturers are focusing on ways to increase equipment efficiency while minimizing cost increases. One promising area is software development, which will expand equipment capabilities and provide greater system flexibility. In addition, new materials and methods of construction are constantly being invented. The most important developments, however, are those being made for transporting thinner panels, improving spraying and etching techniques, and developing rinsing systems that conserve and reuse water. -



Modular wet processing *cabinets allow* manufacturing requirements to *be met.*



A completed wet processing system

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