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Alternatives to a Long ALT







ALT Duration

Conflict



What do we lose
testing faster?



ALTs take time

The Problem

Not always, of course

Yet, sometimes, the plan may take months and months to execute.

There are limits on acceleration

There are limits on sample size



Key Decisions

The Problem

Some key decisions include answering the following question:

How long will it last?

ALT is one approach to create the information to inform the decision.



Tradeoffs

The Problem

Partial or incomplete ALTs provide partial or inaccurate information.

Alternative methods may not provide good enough information or might not be trusted



What can/should

we do instead?

Poor Alternatives



Higher Acceleration

Poor Alternatives

Crank up the heat
and hope for the best

Yes the ALT goes faster, yet is it still
providing useful results?



Use Vendor Claims

Poor Alternatives

This might be a good alternative, yet, in my experience, it should be used with care and caution.

If vendor claims were good enough, we'd rarely run ALT.



Parts Count Prediction

Poor Alternatives

Just don't do it – looking up failure rates in a table and adding them provides little more than a random number.

The trouble is some believe the result is accurate.



What makes ALT

valuable?

Better Alternatives



Physics of Failure

Better Alternatives

With a good model of the specific failure mechanism, there is little reasons to run ALT.

Literature

Prior work

Deep understanding of the failure mechanisms



Field Data

Better Alternatives

It might be crude, yet good enough.

Best if you have sufficient root causes analysis of most field failures

Ok, if the new design is largely based on a previous design



Specific Causes

Better Alternatives

Instead of testing an entire product, focus on specific failure causes/mechanisms

Use system model to aggregate reliability data – at the failure mechanism level – use ALT to fill in the gaps.



Will this work

in your organization?

Additional Comments and Questions

Thanks

see more at AccendoReliability.com