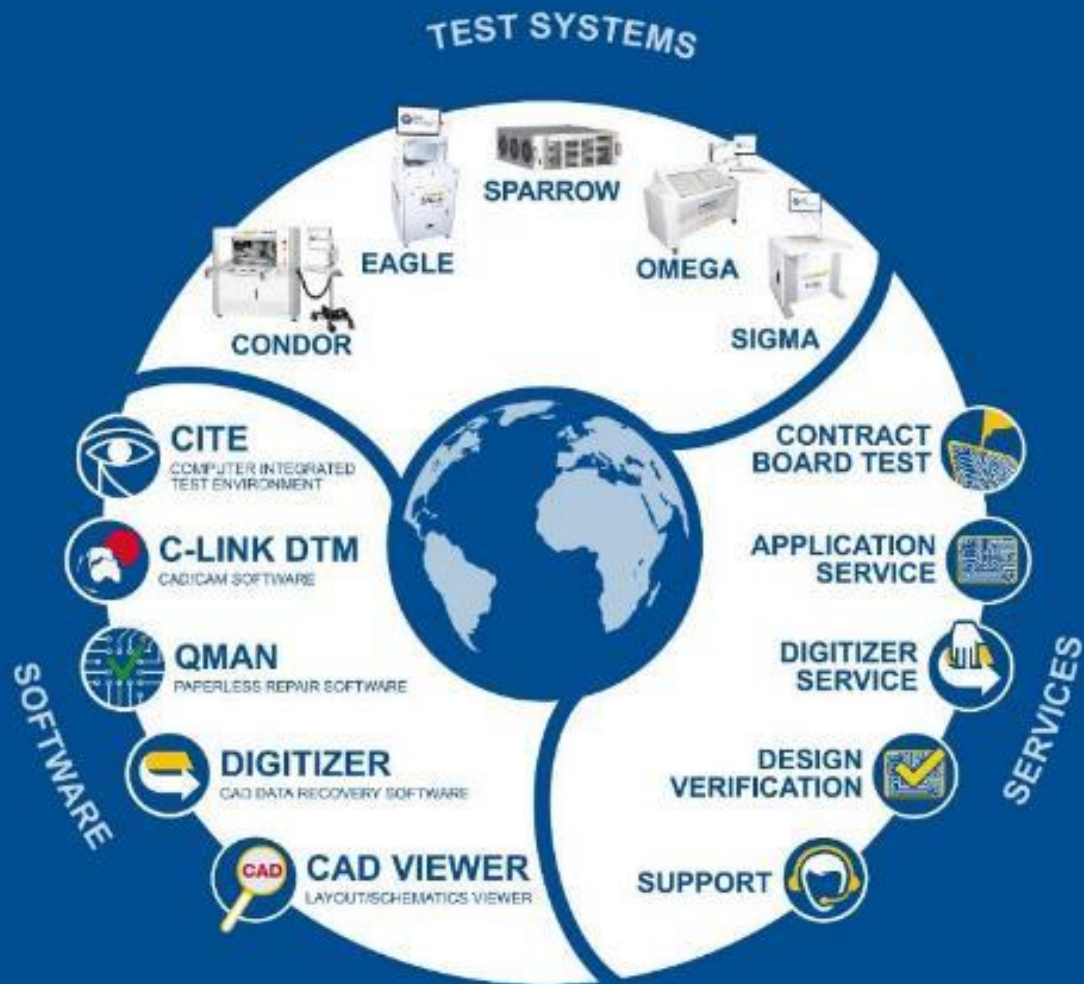


ECO on the fly E&A 2023

Fight against obsolete Components and ECO's



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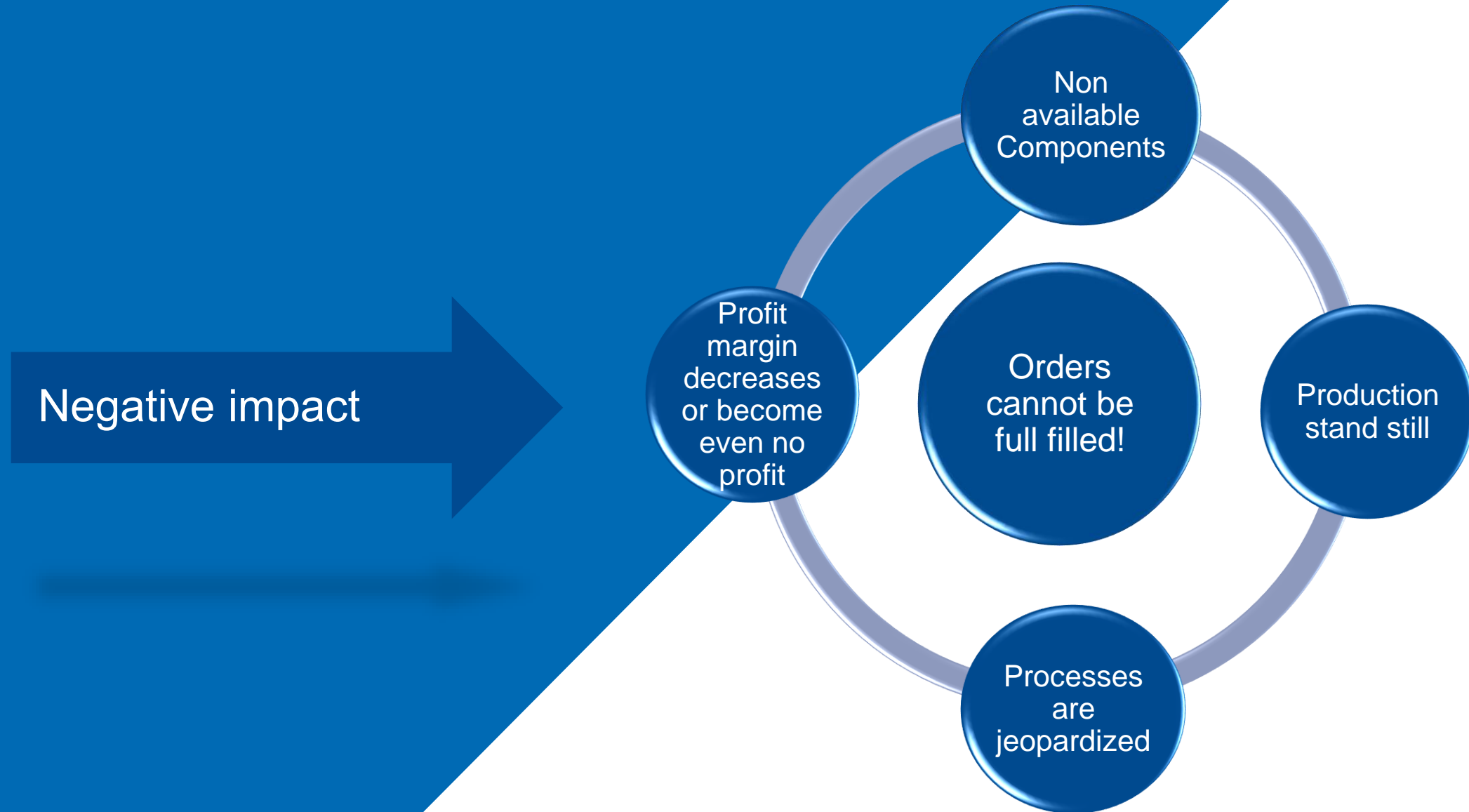


Experiences

- automation
- information technology
- Computers & Peripherals
- medical technology
- automobile industry
- industrial electronics
- Contract manufacturer
- consumer electronics
- Military
- test houses
- Aerospace technology

"Since 1980, Digitaltest has been developing and manufacturing automated test systems (ATE) for electronic circuit boards, software for production automation and quality management systems."

1. The world wide supply chain



1. The world wide supply chain

➡ Consequences and negative effects in all areas!

Cost of
Components are
increasing



Penalties for
breach of
contract loom



Layouts and
Circuitries
need to be
changed



Even in the field of testing!

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Test Programs

- ✓ layout change leads to **change the existing test program**
- ✓ **modification of existing program** needs extra time and stops production for the time of creation and debugging
- ✓ **complete new test program** leads to longer production times and higher production cost



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Adjust Fixtures

**change the
existing fixture**

**production stop
for
modification**

**risk to create
new problems**

**cost of fixture
adjustment**

**risk of shipping
the fixture**



Build New Fixtures

**lead time on
building a new
fixture**

**extra cost,
extremely
expensive solution**



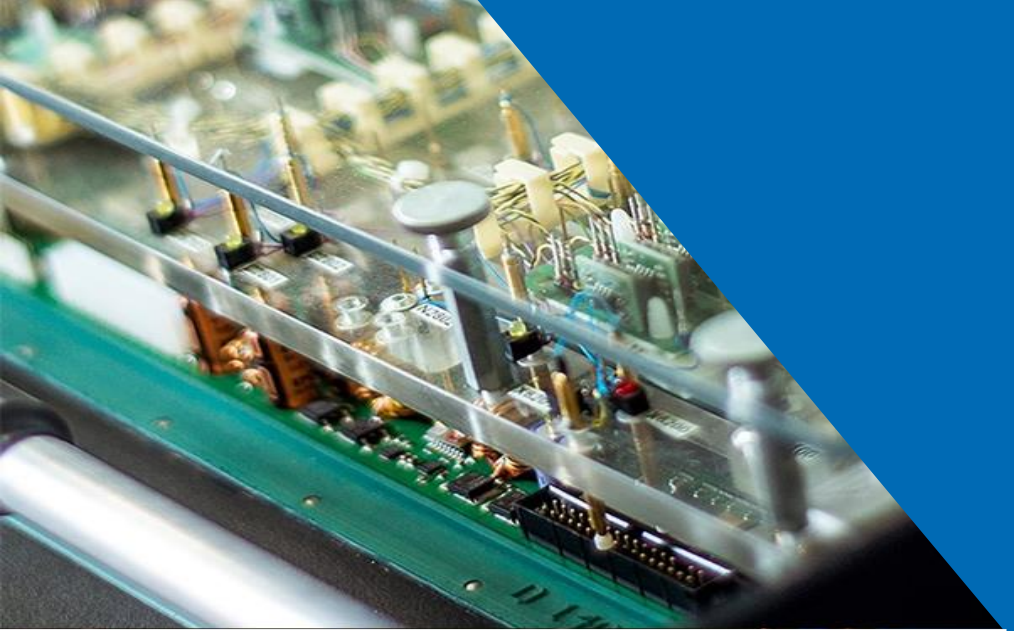
**risk to create new
problems, new
fixture debugging
needed**

**new fixture and
new PCB's need to
be on time for
production**



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The solution: ECO ON THE FLY



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2. The Solution: ECO on the Fly



Combines Fixture and
Flying Probe Test



Saves existing fixture

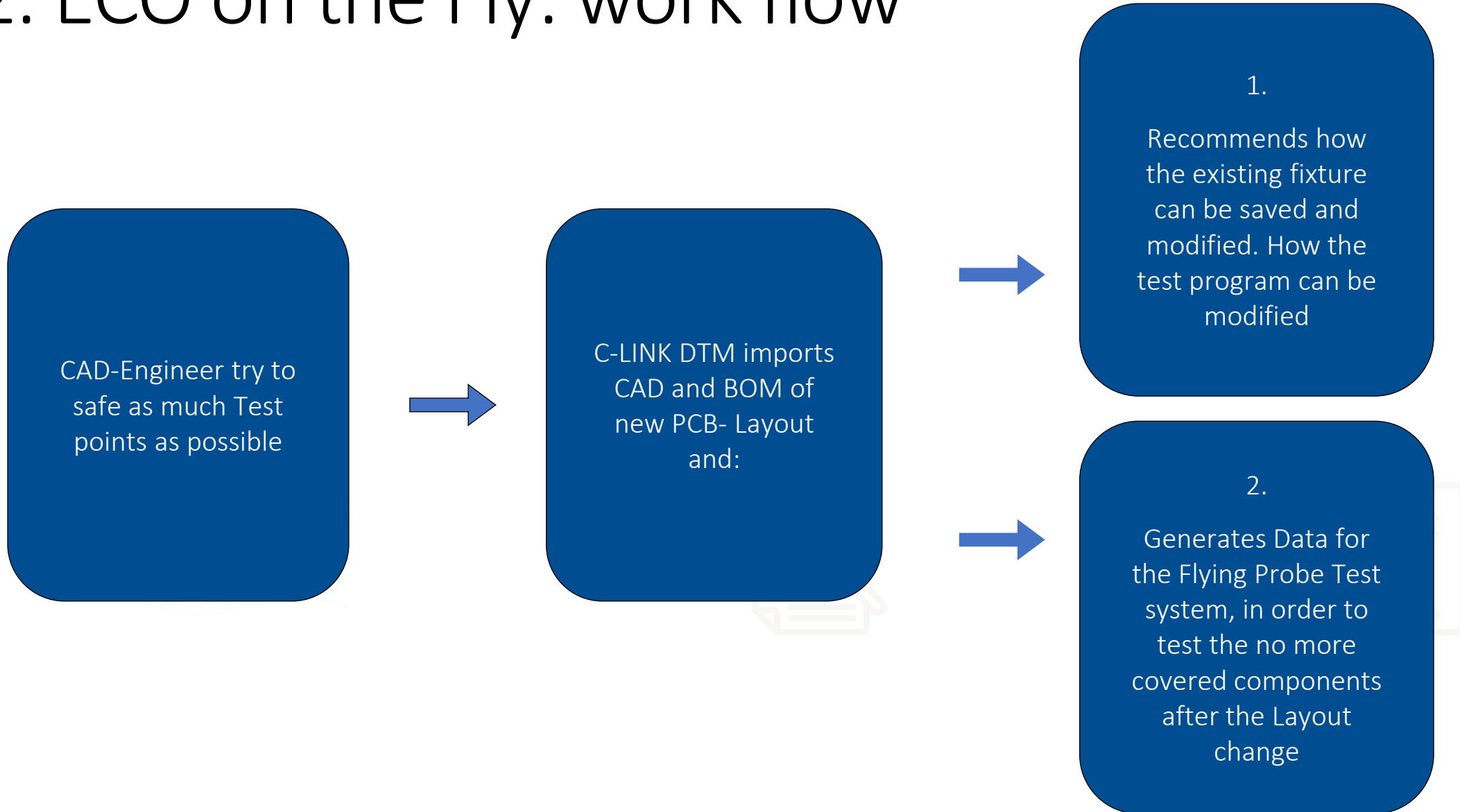


Saves major parts of
existing test program

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2. ECO on the Fly: work flow

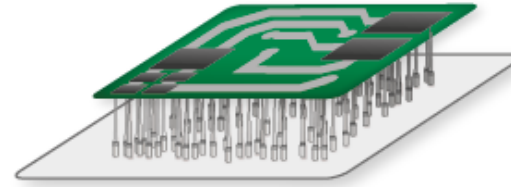


Test Scenario: Example

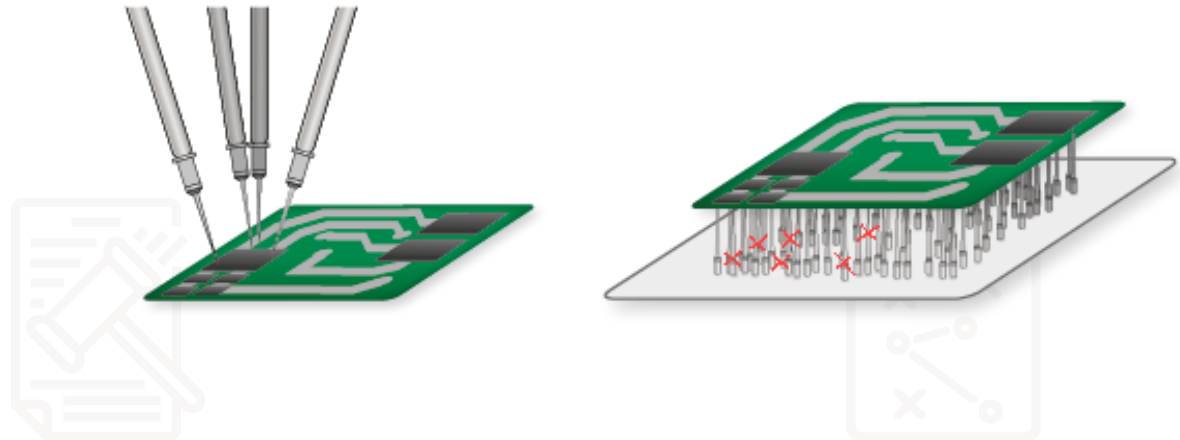


2. ECO on the Fly: Example

➡ PCB Rev. 1: Test Coverage 90 %



➡ PCB Rev. 2: Flying Probe Test Coverage 15 %, Bed of Nails 82 %



Result

Higher Test Coverage of 97 %
Throughput will not be affected

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Test Scenario: The development team manages to keep 80% of the existing test points

20% can no longer be contacted by fixture pins

20% are now checked on the flying prober solution

with combination of flying probe and ICT, a maximum test depth is achieved

time balance between 80% test on fast ICT and 20% test on slower flying probers could work

existing fixture can continue to be used, there are no new adapter costs

change can be made quickly and offers a high degree of flexibility

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Advantages of Combination of ICT and Flying Prober

test programs on both systems run in the same software environment

test system ICT or flying probe is based on the same measurement modules

if there is no fixture available, the flying prober can also be used as a “prototype tester”

less need for test points because nets without test points are then tested on the flying prober

no new fixture costs

future changes and obsolescence can be handled quickly and offers a high degree of flexibility

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3. Advantages

Lack of test coverage due to reduced fixture access is compensated by a flying probe test program

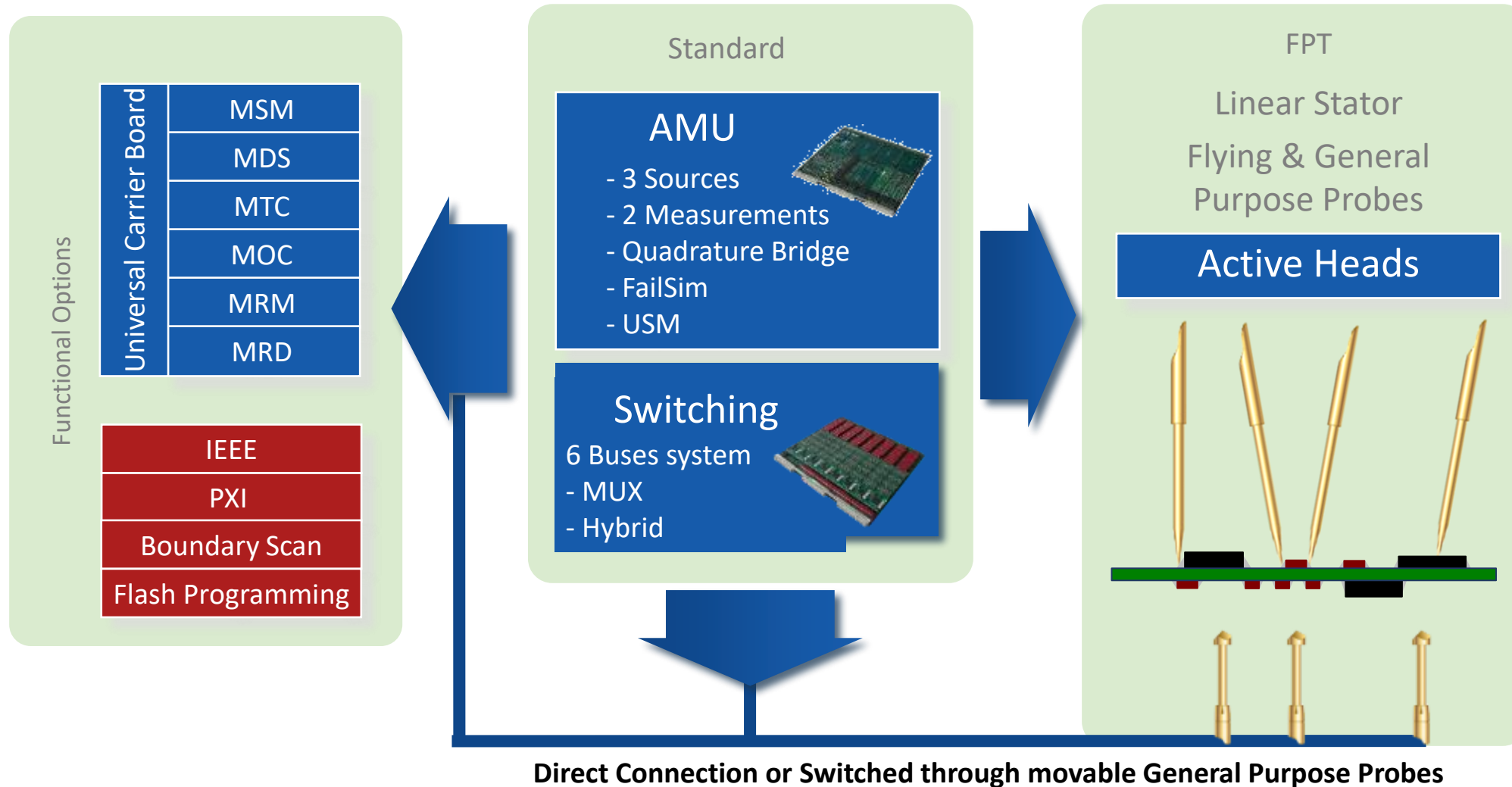
Existing fixtures still can be used

Most possible increase of test coverage

Test equipment adapted to new PCB in a short time

The combination of needle bed and flying probe test keeps cycle time low and avoids bottlenecks

System Architecture



3. At a glance

Test programs on both systems run on the same software environment

"The battle for test points" eases as nets without test points are tested on the Flying Probe

Testsystem ICT or Flying Probe using the same hardware modules

Perfect combination for the best result!

Flying Probe can be used also for Prototyping or NPI

Instead of an (expensive) 2-sided fixture, a single-sided fixture plus flying probe can be used

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Advantage ECO on the Fly

With only one new test station it is possible to cope with all ECOs that occur on different assemblies

ECO on the Fly



This allows us to react flexibly and quickly to obsolescence's, supply chain problems and component bottlenecks in the future

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Thank you very much for your attention

See you on the booth at stand no. 7C130

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