RACAL INSTRUMENTS

TILS®

Talking your legacy's language

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TECHNOLOGY INSERTION INTO LEGACY SYSTEMS

TILS®

Talking your legacy's language

THE CHALLENGE

To maintain a service life of 25 years for your military and aerospace test equipment

THE PROBLEM

To replace individually obsolete test instruments without leaving your whole system uselessly incompatible with new units.

TALKING YOUR LEGACY'S LANGUAGE

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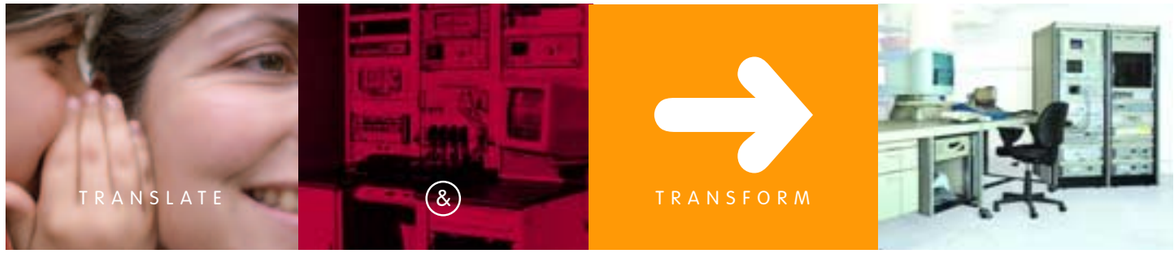
TILS



THE CHALLENGE
To maintain a service life of 25 years for your military and aerospace test equipment

THE PROBLEM
To replace individually obsolete test instruments without leaving your whole system uselessly incompatible with new units.

THE SOLUTION
Technology Insertion into Legacy Systems, from Racal.

No matter which way you look at it, the service life of test instruments is invariably far shorter than that of the Automatic Test Equipment, or ATE, in which they operate – and the replacement of these instruments is an expensive necessity. Re-writing, updating and revalidation of test programs in legacy systems jeopardises the useful and cost-effective service life and high-value investment of the ATE.

But now, Racal Instruments has pioneered a technology to counter this. Called Technology Insertion into Legacy Systems, or TILS, this Windows-based PC software intercepts commands sent from the test program which were originally destined for the now-obsolete equipment. The program incorporates specific translators which dynamically convert the 'old' commands to those understood by the new, upgraded instrumentation. This process not only intelligently accommodates timing idiosyncrasies, it actually processes instrument responses to replicate those of the originals.

There are three main hardware configurations into which TILS can easily be fitted.

Firstly, with a traditional rack-and-stack GPIB (bus-based) system, TILS is hosted on a PC which resides directly on the bus. This allows new instrumentation to be added, by including further command translator packages while maintaining existing instrumentation, so ensuring no changes to existing test programs or drivers.

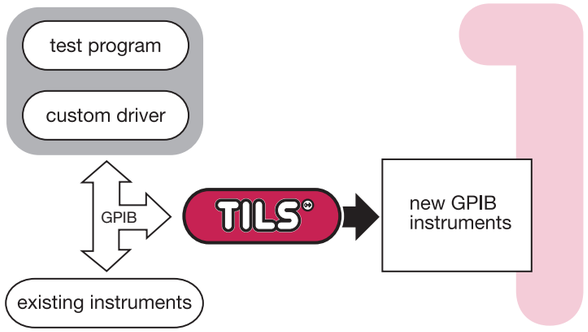
Secondly, where GPIB instruments are upgraded to VXI instruments, TILS can reside in a VXI Slot 0 embedded PC running Windows, to intercept and translate the necessary commands and communicate directly with the new VXI instrumentation. Again, an upgrade path is established such that further VXI instruments can be added to the chassis but existing test programs and drivers need no modification. This configuration could also satisfactorily use PXI instruments as the upgrade path architecture.

Thirdly, the 'in-controller' TILS solution allows the software suite to co-reside with the Test Executive, assuming the system controller's technical platform is, or can be upgraded to be, compatible. Commands to existing instruments are 'passed through' while interception and translation of commands to the upgraded instrument is undertaken.

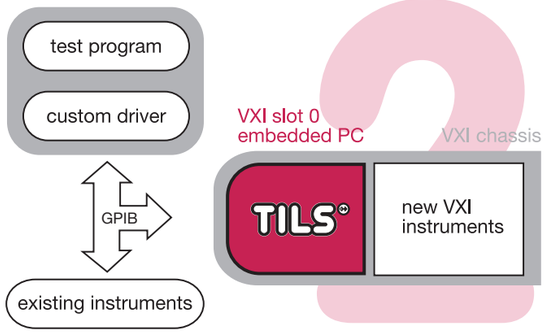
The TILS software suite comprises two components – the TILS infrastructure environment, or System Software, and the Command Translator Pair Software. The System Software, which resides on the host controller, is the 'engine' which performs the interception of commands and determines which ones require translation. This environment also interfaces between the TILS host controller and the Command Translator Pair Software. This Command Translator Pair Software is the specific language translator for each instrument's command set, which performs the dynamic translation and provides for any timing or synchronisation requirements between the test programs and the instruments. Using the extra features incorporated within the TILS environment and the Command Translator Pair infrastructure – provided that the chosen replacement instruments can adequately perform the same measurement functions as the original – accurate mapping and translation of the required functionality is easily effected.

Once TILS is seamlessly installed into the ATE architecture, existing test programs can be used with little or no modification, and a structured path to future instrument upgrade is provided – all safeguarding the significant investment test professionals have made in their tools.

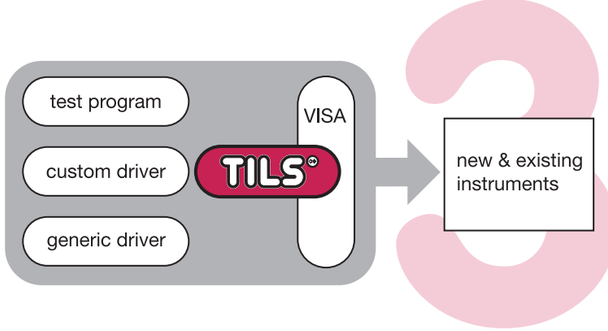
THE THREE MAIN HARDWARE CONFIGURATIONS:



1 With traditional rack-and-stack systems with separate controller, TILS can be conveniently hosted in a standalone PC with appropriate control bus inputs and outputs.



2 Replacement instruments don't have to strictly replicate the originals – eg, GPIB bus types could be replaced by VXI/PXI. Hybrid systems can also be used.



3 Depending on the implementation already in place, TILS can be co-resident with the system controller. This also applies to VXI/PXI systems with Embedded Controllers.