# Thermal test
## DynaWorks Solution

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## The Context

Our DynaWorks solution for Thermal test satisfies the needs in terms of preparation, acquisition, monitoring, analysis and storage from few channels to several thousands. This solution aims to:

- Facilitate test preparation and secure test specimen & chamber acquisition
- Prediction in real-time the thermal balance conditions to reduce test duration
- Process in real-time the measurements to allow easy correlation with Thermal model
- Share in real time results through internet or VPN : optimized interface between test engineers and design teams

Specimen — DynaTherma — Nominal — Redundant — DynaWorks Real-Time clients — DataBase — Monitoring, Advanced tools

## Fast Facts

### > Challenges
- Single & Quick preparation, acquisition and monitoring environment
- Improve productivity
- Shorten test cycle time
- Event and measurement technical memory
- Share test results
- Operational reliability
- Standardization of work methods

### > Industry/Market
- Aero-Space
- Defense
- Energy
- Research

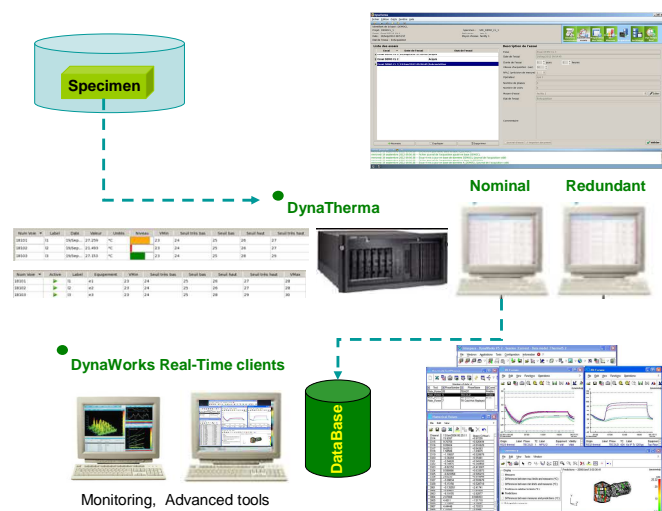### > Benefits
- Easy data mining of results for high volume of data
- Gather different data sources (Thermocouples, Telemetry, …)
- Increased productivity
- Immediate analysis & correlation with calculation/simulation
- High reliability of the acquisition process
- Telemonitoring
- Redundancy hot or cold, LAN
- Access rights

### > Products
- DynaTherma
- DynaWorks RealTime

## Features

- Establish a process to realize the thermal tests campaign
- Test preparation & Acquisition management
- Preparation of physical channels (ThermoCouples, PT100, PT1000, Intensity, Current/Voltage, …) with compensation or not, and computed channels (mean, min, max, deltaf, * / - +)
- Laws polynomial : up to degree 5 in + and -, $a * X + b$, $a * b^{(c*X+d)}$
- Instrumentation import through Excel Files or using an instrumentation database
- Advanced Alarms management (sounds, events, history, …)
- Parallel real-time data storing into up to 3 DynaWorks Databases (nominal, redundant, DMZ)
- Acquisition Recovery : recover and synchronize all the data from acquisition systems in case of computer or network failure
- Reliability to handle long duration tests up to several months
- Hot or Cold redundancy - LAN / GPIB redundancy - Many logs layers
- Real-Time Monitoring: display and analyze real-time evolutions of channels (up to 3000) with low sampling rates through LAN or WAN.
- Several data supply sources resynchronization
- Different user profile to share the data, different access rights

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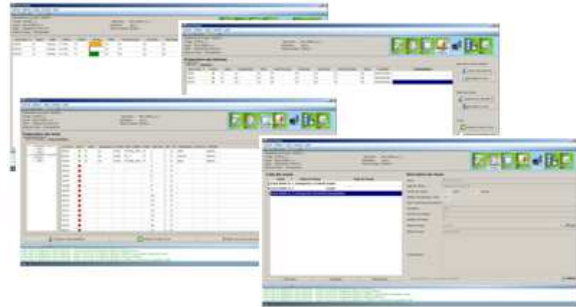Tel: +91 44 28173711 / 4206 8668 /
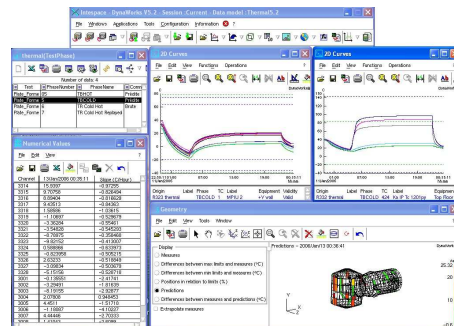28171631
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DynaTherma is coupled to the acquisition system management module and sets up the test configuration, and pilot or exchanges the following information with the acquisition systems:

– Define tests and their characteristics (document, plane, image, …),
– Instrumentation (Channel description, Sensor type, Unit, Alarms, Objectives, Computed Channels,…). A channel can be shown or not to the customer. The instrumentation can be modified during the test.
– System validation
– Start, stop acquisition, new phases, recover acquisition in case of failure
– Transfer in real-time of the measurements (up to 3 Databases)
– Log of events



No matter the number of channels and what type and number of acquisition systems are used, operators only have to deal with a single working environment either integrated in a typical business information system or standalone for on-site tests.

Instrumentation setup of more than 3000 measurement points is faster thanks to an intuitive and user-friendly interface.



DynaTherma is coupled to DynaWorks RealTime which allows to manage the measurement points and monitor the thermal tests. Each test can be split in several phases for a better monitoring of the overall test campaign during several months. An advanced alarm tool allows to control the test results. For more information on DynaWorks RealTime, please consult us.

In case of failure of DynaTherma, the digital acquisition system continues the measurements in a standalone mode. A later recovery can be performed on demand, from DynaTherma. The recovered data are automatically imported and resynchronized. A redundant second Database can be used.

Telemetry can be stored into DynaWorks database. Databases can be located on DMZ to provide a secured tele-monitoring access to experts or customer engineer who are outsideof the Test Center.
At the end of each acquisition, the test is locked and the detailed full test set-up is stored in a database. Operators are able to retrieve a complete test historic.

Available on Linux Red Hat 5.3 with TAMS V3.8.
DynaTherma is available for Agilent AG34980.
For other systems, or other platforms, please contact us.


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