# CT-View™

A visual tool to help you analyze the performance of your embedded applications.

Visual Analysis Visualization in Embedded Development

CT-View offers a unique way to observe the behavior and performance of an application running on an embedded platform. It works in conjunction with your debugger and any Kernel Awareness Tools you may have, or stand alone, without a debugger, Kernel Awareness, or hardware present in some cases.

During a debug session, CT-View can capture System calls while you're running, hitting breakpoints, or single stepping through an application. The tool allows you to highlight and view information such as when a service call occurred, how long it took to execute, and the number of times each service was called. The Track View display show service call sequence and task behavior, thus providing the developer with a visual perspective and context about the system as it executes.
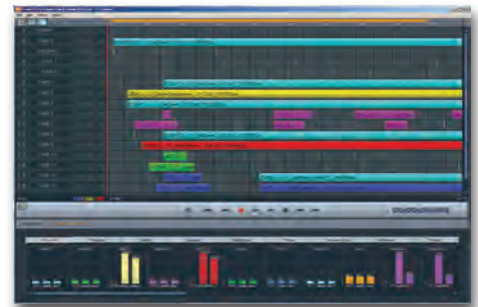
Track View Visual Analysis Tool

The CT-Translation Engine is paired with an application which resides on the developer's workstation and transforms the (live) or previously recorded performance data into a visual representation of the activity on the embedded target platform.

Track View - A Merging of Two Seemingly Unrelated Technologies

CT-View has merged the visual capability of a digital multi-track audio recording workstation with the concept of embedded execution flow.

Just as an Audio engineer can "see" clicks, pops and other recording defects - even if they are not noticeable to the untrained ear, CT-View allows the developer to use visual clues and pattern recognition to draw attention to problem areas and speed up the process of correcting problems and optimizing the application.

CT-View visually displays when and where each service or function is called and the relation to everything around it, thus granting the ability to see performance anomalies and how well the sequence of execution parallels toward the developer's expectation. With multiple zoom levels the developer can drill down and have a closer look even to a nano-second in time scale. This granular detail will help to determine and isolate the specific function or service causing the problem allowing for corrective action and tuning until the desired behavior is obtained.

Inspector View

The Inspector View displays a visual representation of performance data for each service, function call, or block of code that is time-stamped within the embedded application. The data is represented by bar graphs that provide fastest, slowest and average execution times for the specified service during a live capture or session playback.

This feature is particularly useful for side by side comparisons, such as the performance impact of using different Real-Time Operating Systems.

The visual aid of the Inspector View also provides a developer with the perspective of possible anomalies and bottlenecks. High numbers, or nearly filled graphs, would indicate that a particular service, on average is taking a long time to complete, providing an immediate identifier subject of further investigation. Visual recognition of skewed or unexpected execution times helps the developer understand where to look within the given time line to quickly identify problems such as an un-wanted context switch or perhaps synchronization issues with other components.

In any case, simple visual feedback leads to faster editing and fine tuning which ultimately produces efficient and predictable results.

Features

CT-View contains various features that assist with presenting the developer with useful information about the activity that is occurring on the target.

LIVE CAPTURE
The developer can simply run the application on the target and view activity while the capture or session is in progress.

SESSION PLAYBACK
Every session is automatically saved to a file named "temp_log.ctv" on the developer's hard disk in the folder where CT-View is installed. Independent captures may be loaded and played back as often as desired. Log files may be renamed and stored for comparison to future sessions.

LOOP PLAYBACK
The developer can isolate any section of activity and repeatedly loop through the defined beginning and end point during playback or while single stepping through each event.

ZOOM
CT-View provides 15 levels of zoom to allow developers to view granular activity down to a nano-second scale.

NAVIGATION BAR
- Loop Playback
- Jump to Start
- Play Slower
- Stop Playback
- Playback / Animate
- Step
- Capture / Record
- Play Faster
- Jump to End

EXECUTION SEQUENCE
ALARMS
TRACK VIEW - CONTROL
COLOR THEMES
COLOR CODING
CODE BLOCK COVERAGE
CUSTOM VISIBILITY

Coressent