More reliable than the human eye: fully automated visual inspection

The R&S®AdVISE video based monitoring and analysis system detects malfunctions, automatically and completely, during electromagnetic susceptibility measurements. It eliminates human inattentiveness from the test process, ensures reproducible test results and simplifies documentation.

R&S®AdVISE is the ideal choice wherever EUT characteristics need to be visually monitored. This includes electronic entertainment equipment, displays in vehicles, professional devices and systems in an early stage of development. In the new version 3, the software has been completely redesigned. It contains new features, expansions to the remote control interface and operating improvements.

A typical R&S®AdVISE application is to measure electromagnetic susceptibility (EMS) using the R&S®EMC32 or R&S®ELEKTRA EMC test software (Fig. 1).

An electromagnetically shielded HDTV camera films the EUT in the anechoic chamber during the test cycle. R&S®AdVISE evaluates the video signal in real time based on defined requirements and reports deviations to the measurement software, which generates a test log. R&S®AdVISE records the evaluated video and creates an event list.

During the test, the EMC test software can transfer test parameters such as frequency, disturbance level, modulation and antenna position to R&S®AdVISE, where they are superimposed on the recorded video. This makes it possible to assign events to specific test conditions (Fig. 2).

By clicking entries in the event list of the integrated video player, the user can select and view critical situations, and incorporate clips or stills into the documentation.

If desired, R&S®AdVISE can be integrated into the user's own control program via the remote control interface. Measurements can also be controlled manually, and logs can be generated on the basis of the internal event list.

Anechoic chamber with optical monitoring system

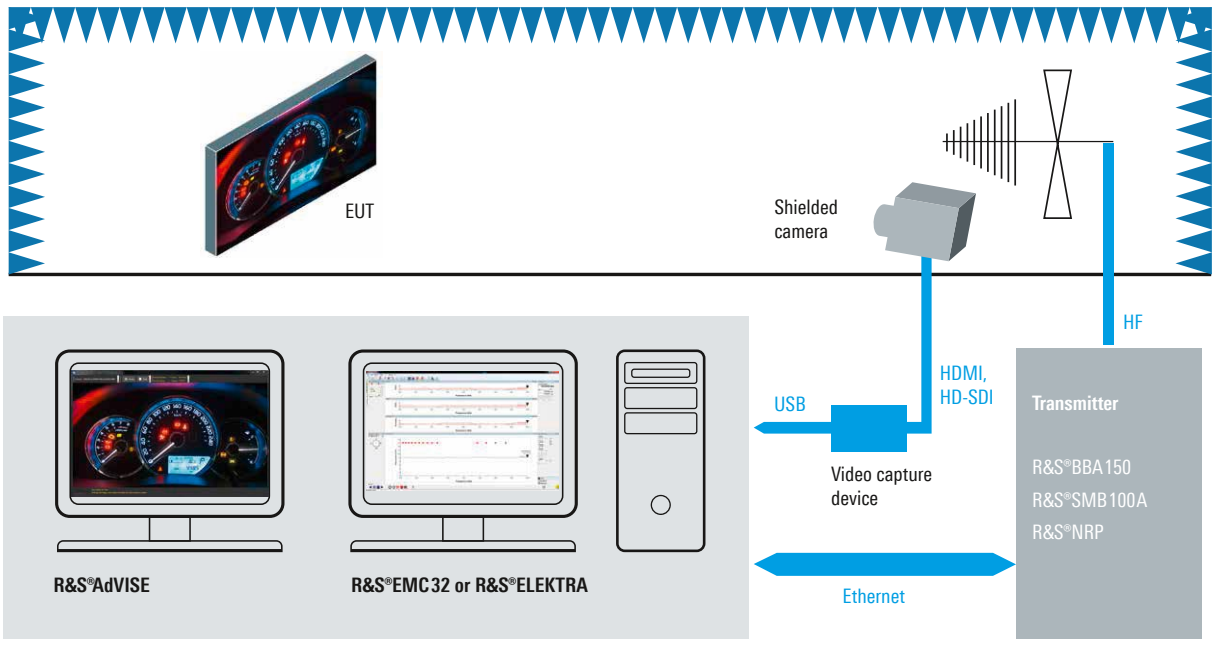

Fig. 1: R&S®AdVISE in an EMS test system controlled by the R&S®EMC32 or R&S®ELEKTRA EMC test software.

Images are analyzed using regions of interest (ROI), which the user marks in the video image and assigns to a suitable analysis method (Fig. 3). Up to 32 ROIs can be monitored simultaneously (R&S®ADV-K1032 option). This leaves enough computing power to run the R&S®EMC32 or R&S®ELEKTRA EMC test software on the same platform.

The analysis engine will consider all typical display elements, such as signal lights, flashing lights, background illumination, moving elements, analog indicators, symbols, numbers, warnings and running lights. They can be individual elements, or displayed on a screen.

In addition to analyzing camera signals, R&S®AdVISE can use the R&S®ADV-K1050 virtual camera option to evaluate existing video recordings.

R&S®AdVISE runs on any PC with Windows™ 7/10 that meets the minimum requirements. No special interface is needed for feeding the video signal. It goes through a standard USB 3 interface with upstream off-the-shelf portable capture device. This makes the system usable with any camera equipped with an HDMI or HD-SDI interface.

Summary: After just a few minutes of configuration work, the current version of the R&S®AdVISE visual monitoring system handles time-consuming tasks automatically and makes sure that not even the smallest undesired events go unnoticed.

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Fig. 2: Test view with superimposed information from an EMS test. All display elements are declared as ROIs and are monitored for changes.

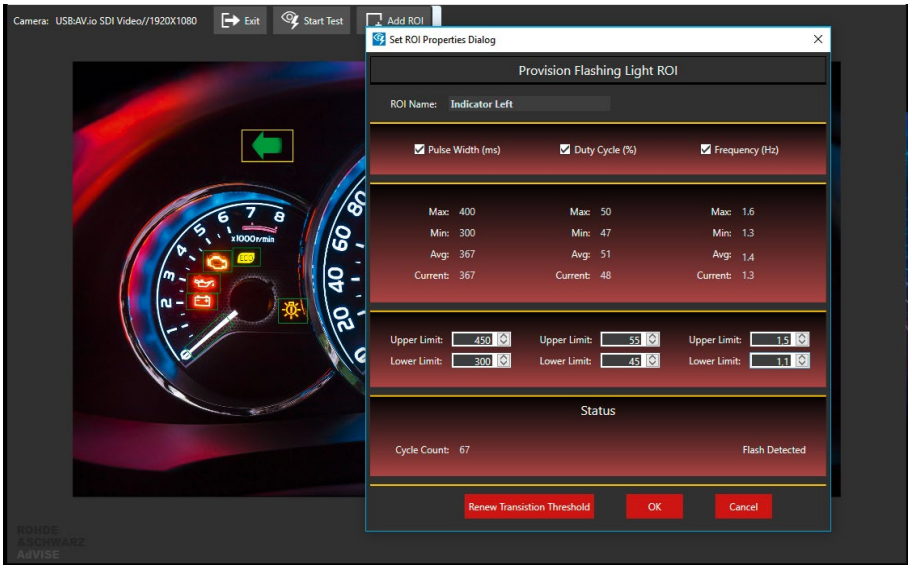

Fig. 3: Monitoring a flashing element with the ROI flashing lights method.