



The DetailExplorer is a software tool which enables you to represent any details of a video sequence in higher resolution and quality. This allows a better visibility of details which may otherwise remain unseen.

Fields of Application

The DetailExplorer may be used for the analysis of surveillance recordings with low resolution and quality, and especially for:

- the recognition of car registration numbers and types
- the recognition of strokes, trademarks, etc.
- the recognition of people

The DetailExplorers' methodical approach

The individual frames of a video sequence contain slightly different information about an object of interest. These differences may result from different object positions, usually negligible camera moves (wobbling), hissing (noise) in the cameras sensor chip, the AD conversion of frames and so on. The result is a sequence of frames which code slightly different information for one and the same object.

By putting this information together in the correct manner, the result is a picture with higher resolution and quality than each of the original frames.

The special performance of our solution is based:

- Upon the particular exploitation of all information about the object of interest hidden in the whole sequence of frames. Thus, the DetailExplorer reaches good results even when usual methods of video analysis, which are based on the improvement of single frames, meet their limits.
- Upon the use on frame sequences representing the object of interest in various sizes and positions (position on the frame, perspective, etc.) This makes the use of the DetailExplorer possible even when the recorded objects move fast and in an unpredictable way.

Editing detailed frames with the DetailExplorer

While starting the DetailExplorer, a graphical user interface opens. The user loads the frames of interest, and if necessary, edits them individually (decimation of hiss (noise), histogram spreading, etc.). The detail of interest will be marked with support elements (auxiliary lines), while the program assists the user. Next, the program generates the detailed picture with high resolution. Depending upon the number of input frames and resolution, this procedure lasts anywhere from a few seconds to some minutes. Finally, the detailed picture may be improved with further editing.



Technical Parameters

Number of input frames used for generating the detailed picture	Minimum: 2 Maximum: memory limited, <i>recommended: 3 to 10</i>
Admissible input frame formats	BMP, JPG, GIF or SUN raster images
Admissible input frame resolution	memory limited, <i>recommended to reduce computation time: QCIF, CIF</i>
Admissible output frame resolution	memory limited, multiple integer of input frame resolution
Expenditure of work	Depending upon image material and user experience, for instance, a car registration number can be made visible from 4 frames in few minutes
Computation time	Example: 6 color frames, size: 120x176 pixels, each containing 9 auxiliary lines, will be enlarged 4 times with the fast method <ul style="list-style-type: none"> • Computation time (P200 + 64MB) ca. 30 seconds

System Requirements

Processor	Pentium 200 MHz
Storage	64 MB
Operating system	Windows 98 / Windows NT (version 4.0 or higher)