

signum.RTA

Real-Time Analysis of Movements in Sports

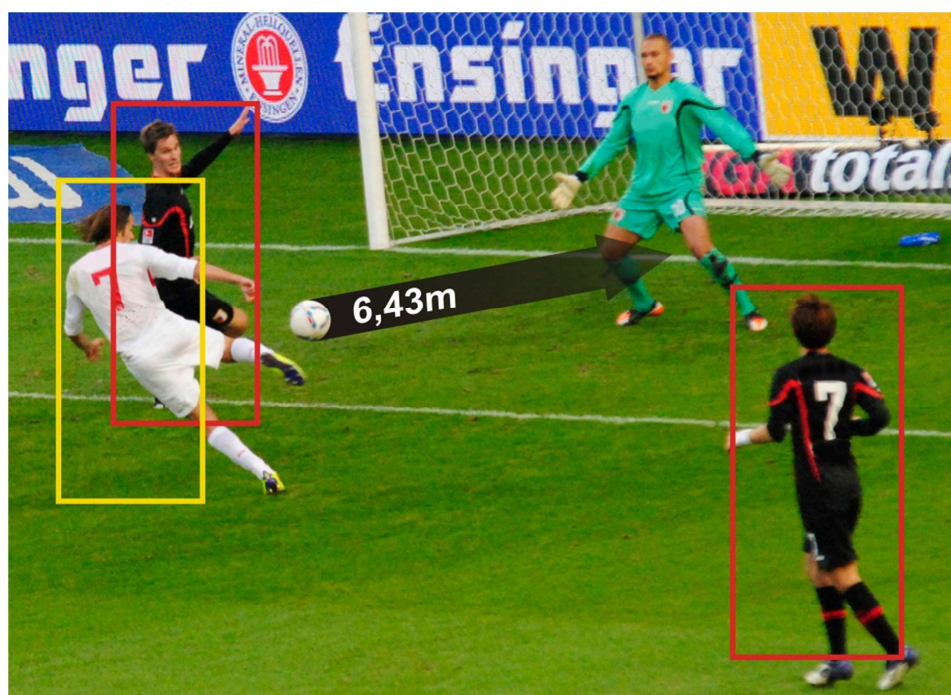
signum.RTA is the most advanced real-time analysis solution available to the market. Analysis is available in a fully automated mode, where all major features like measurement of distances, distances travelled, acceleration, heat-diagrams, and many more features are available while they are taking place.

Any camera feed providing uncompressed video feed can be attached to the RTA solution, which is usually hosted on a **signum.VisionFactory** platform. Typical camera input is GbEthernet, HD-SDI, Camlink-HS. Depending on the server processing power, and the number of cameras attached, typically videos up to 6 cameras with HD resolution can be attached to the server.

Typical applications for this solution are sports with medium speeds, such as football, basketball, horse-race, and cricket.

In combination with the video capture devices **signum.VisionFactory** where the capture and storage of the videos is handled, the **signum.RTA** is providing essential information on situations like fully automatic offside detection and the time when the situation occurs.

Analysis is enabled for 2D and full stereoscopic 3D either in real-time, or in an offline mode, e.g. for analysis during sport shows. Depending on requirements, **signum.RTA** may handle analysis via a single camera feed only, or it may process videos from multiple cameras either for 2D or 3D purposes.



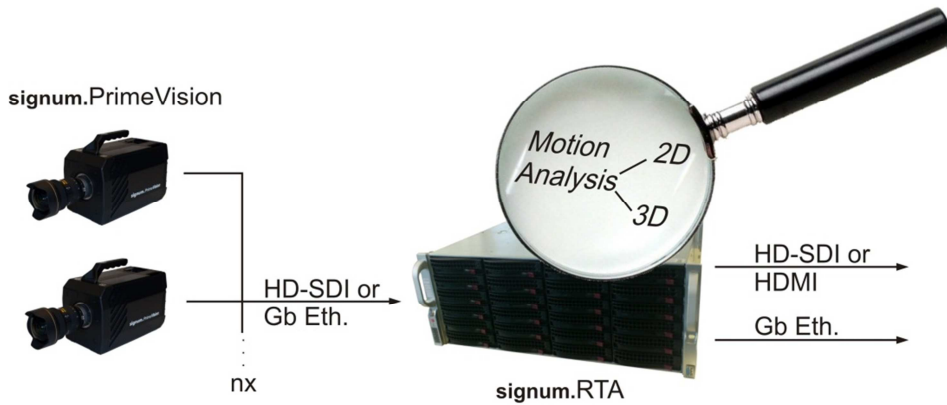
FEATURES

- ◆ Real-time processing of videos from dedicated cameras
- ◆ Measurement of speed, distances, angles, acceleration, etc. in real-time
- ◆ Automatic tracking of objects
- ◆ Markerless tracking
- ◆ Tracking with correlation patterns
- ◆ Playout of videos including analysis data as overlay in real-time
- ◆ 2D Analysis from single camera
- ◆ 2D Analysis from multiple cameras
- ◆ 3D Analysis from synchronized and calibrated cameras
- ◆ Video-in format is any such as
 - raw video
 - RGB
 - YUV
 - Uncompressed avi
- ◆ Video-out format:
 - HD-SDI
 - avi, mpeg, mov, etc.
- ◆ Multi-Server Configurations for large applications
- ◆ Normalization of videos in real-time
- ◆ Color correction
- ◆ Debayering
- ◆ Solution adaptation on application
- ◆ Graphical output via attached graphics engines

SPECIFICATIONS

- ◆ Operating System: Windows 7, Windows 8, Windows 20xy
- ◆ Frame Rate of captured videos: 25, 50/60; optionally up to 100Hz
- ◆ Output data: ascii file, excel file, xml
- ◆ Input data: xml
- ◆ Color depth any (8bit, 10bit, 12 bit)
- ◆ Dual quad Core CPU recommended or higher

APPLICATIONS



Soccer

Soccer for example is one of the most typical applications to signum.RTA. Distances to the goal may be provided in real-time every time the ball gets certain acceleration. Another application is the full automatic offside detection.

These features may also be used for post-analysis, e.g. during a TV-show after the match in order to demonstrate enhanced analysis. Distances travelled, ball possession rate, heat-diagrams of individual player or full automatic goal detection are other professional applications for this tool.

Baseball

This famous sport is seeking for such analysis solutions, where various tactic scenarios are studied.

signum.RTA enables to review actions from various perspectives in order to deeply understand the result

and possibilities for improvement. In addition it makes this sport to the audience even more attractive and interesting.

