LDS - Robberies and store burglaries

The aim of the project is to provide a software-based solution for the detection of potential offenders based on the analysis of gestures, facial expressions and behavior.

The trade complains about billions of losses by shoplifting. The amount of the damage amounts to around 4 billion euros in Germany alone with about one percent of the turnover. The damage caused by theft in retail food retailing is roughly equal to the profit achieved. It is obvious that there is great interest in curbing this crime with effective and economic measures.

Today video surveillance provides ways to observe and document the criminal offences. The analysis is carried out by suitable personnel. The success of the measures in the monitoring of complex and extensive scenarios depends exclusively on the time and the individual experience of the observer and analyst. Evaluations are based on the current moment. Behavioral pattern analyzes over longer periods of time or the analysis of results from repeated shop visits is generally not possible. Staff costs limit the possibilities of the assignment.

Body language and behavioral patterns allow conclusions to be drawn. The cognitive abilities allow us to understand and interpret such signals. We speak of human knowledge. Particularly talented persons are consequently also particularly successful in the evaluation of material from video surveillance.

The aim of the project is the computer-assisted evaluation of the video material from one or several cameras. Methods of pattern recognition and artificial intelligence are used. The evaluation of the facial expressions and gestures provides clues. The evaluation of the track of persons within the monitoring area and the time behavior are further input variables for the method. The results of international research projects in the European Union, for example the INDECT project, provide a starting point for a specific solution. Other results from current research will be considered.

The combination of various features and the comparison with behavioral models provide references to critical persons in the sense of the objective. Results are appropriately fed to the personnel entrusted with the monitoring. The advantage lies in the concentration of the analyst and observer on critical processes with correspondingly improved effectiveness. Overall, there are cost savings.

The project is designed to develop appropriate technical support tools to improve the efficiency and efficiency of the processes.

Technology	Gesture and mimic analysis, behavioral analysis, tracking, image and video processing, statistical modeling, pattern recognition, classification, statistics.
Market	Retail, wholesale, room monitoring in general.
Remarks	Inclusion of existing video technology, connection with suitable terminals (smartphone), consideration of all legal framework conditions.