To implement the automated process control of the piece sorting of products in the flow on the conveyor in the food industry, the necessary means of controlling the characteristics of individual units of the product flow, tracking their movement for timely rejection by the actuator.

To automate the process of managing the process of piece sorting of products in a stream on the conveyor, a scheme of an automatic tracking system of objects on a conveyor belt by a video signal is proposed. The trajectory of moving objects in the flow is suggested to be tracked based on the similarity function between the reference image on the previous one and one of the many fragments in the search area on the subsequent frame.

Thus, when forming the process control of sorting objects on a conveyor in the food industry, it is advisable to follow the video signal based on pairwise analysis of sequential frames. At the same time, the trajectory of moving objects in the stream must be tracked based on the calculation of the similarity function between the reference image on the previous one and one of the many fragments that lie in the search area on the subsequent frame. To comply with the condition of detection accuracy, it was established that the threshold for the cross-correlation value should have a value of at least 0.985.

**Keywords:** video signal, conveyor, sorting, automation.