**PROPOSED METHOD**
- Centralized multi-agent system
- System combines several types of basic image information
- Agents are controlled by a moderator
- Reactive agents with memory

**INPUT IMAGE**

**REGION IMAGE PREPROCESSING**
- Expansion of the brightness range
- Clustering, contour analysis

**EDGE IMAGE PREPROCESSING**
- Expansion of the brightness range
- Adaptive threshold, canny detector

**AGENT START IMAGE CREATION**
- Edge image and region image intersection

**WORK OF AGENTS**
- Move, copy, create new edges, destroy existing edges, die
- Agents use our own heuristic function:
\[
ps = am \cdot ca + rm \cdot cr + em \cdot eTP + pm \cdot ep
\]

**AGENT INITIALIZATION**
- Agents are initialized on the ends of edges
- Agents are initialized on the crossings

**EDGE POSTPROCESSING AND REGION FILLING**
- Skeletonize, edge repair using modified “bubble” method
- Growing regions, calculating average values of brightness, edge filling