Smoke-detection is a complex task and most of the algorithm authors have their own specific approach to solving such problem. Most of the algorithms have multiple phases or methods of detection (e.g. motion detection followed by region energy estimation) so the different phases of detection are categorised. Some of main categories are specified here, and for each category methodologies from different authors are referenced.

Main categories are:

- Chromatic detection
- Neural networks
- Wavelets
- Markov models
- Motion dynamics
- Fractals
- Methods for false alarms reduction
- Random forests

The number of alarms depends largely on manually set detection sensitivity parameters that are specific for each phase of the detection. To improve the detection, it is possible to adaptively estimate those parameters using GIS and augmented reality:

- Adaptive estimation of visual smoke detection parameters based on spatial data and fire risk index (Free access to this article until 26th March 2014 on link **http://elsarticle.com/1ejF8LW**)

Video database used in this article is available at the following **link** . .