The thesis concerns the system of management quality of medical devices emitting ionizing radiation. The subject is to study modern methods, which are able to influence effectivity of management activities. Most of the methods were used in the industry, where they represent certified techniques in the field of industrial engineering. The study was realized in conjunction with clinic of imaging methods at teaching hospital Motol in Prague. According documentation (legislation, quality asurrance programm) and other facts, the analysis of current situation lead to specification of important areas of quality control process, which were choosed to be improve. The aim of this work was to suggest optimalization solution for process of control quality of medical devices emitting ionizing radiation. The evaluation of conquering koncept, was performed by methods of simulation.