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DEVELOPMENT OF SOFTWARE FOR STATISTICAL PROCESS CONTROL

Djordje VUKELIC[1], Tone VRECIC[2], Peter KOGEJ[2],
Janko HODOLIC[1], Branko TADIC[3]

[1] Faculty of Technical Sciences, University of Novi Sad, Novi Sad, SERBIA
[2] RLS d.o.o., Ljubljana-Dobrunje, SLOVENIA
[3] Faculty of Mechanical Engineering, University of Kragujevac, Kragujevac, SERBIA

ABSTRACT:
Statistical methods for quality evaluation provide analyses of production processes, and based on it there is also provided the realization of adequate preventive and correction measures in order to increase the total production quality. In this paper importance is emphasized for appliance of statistical quality control methods for evaluating process stability and capability. There is a preview of structure and functioning of the developed applicative software for statistical process control. At the end, corresponding conclusions are given.
KEY WORDS:
quality, statistical process control

1. INTRODUCTION

Prerequisites which are indicted by the modern market, require automation of work procedure in all activities that are involved in one enterprise. Appliance effects of automation in work procedure and improvement of quality system are numerous, and they can be seen through reduction of total costs and time [2]. In addition, modern information systems have great capability in way of liberating man from its routine activities and jobs related to long execution of mathematical operations over the large number of data, and that is important in field of quality control [3]. As for computer appliance in field of quality control in CIM surround, today several approaches are present: Computer Aided Quality (CAQ), Computer Aided Inspection (CAI), Computer Quality System (CQS) and Computer Integrated Quality (CIQ). Mutual thing for all these approaches is that the secure quality system supported by computer represents group of engineer activities which provide formation of information system about parameters for product quality in all stages of its life cycle (from developing of product, and manufacturing of product, to exploitation of product), and all that has its conception in increasing of product quality and present equipment availability [1, 4].

With manufacture organization analysis, particularly in area for quality control, in great number of production systems in surround, it is indicated that in those systems statistical quality control is being applied. In large percentage (85%) quality control is managed particularly at manual way, and in some smaller (15%) in interaction between operator and computer. Computer is exclusively being used for data storing (MS Excel). Measuring is manually done, as well as adequate calculations and drawing of adequate control charts. The whole job is very heavy, long term and mostly depends on operator.

When these problems were identified, authors of this paper have defined the main aim as development of adequate system for automation of process acquisition, preparation, statistical processing, previews and grade of observed quality characteristics in real time. During development of adequate applicative solution there was attention on making the solution easy to use, and from the other hand, making it compatible with measuring equipment. In continuation of the paper operating of developed system – applicative software is provided.

2. STATISTICAL PROCESS CONTROL

Statistic control is based on the application of statistic methods. Since the application of this control method determines changes and change trends of process characteristics, the term statistical