**A Statistical Approach to Project Cost Estimation: Modeling the Stochastic Component of the Projected Cost** DORU VELEA, ANATOLEY ZHELEZNYAK, Planning Systems Inc., VA — Based on the assumption that there is always a stochastic component in project cost data, we developed a statistical methodology for the analysis of the project cost fluctuations. We considered as examples two different AF projects: a relatively short term project in the framework of the Earned Value Model, and a long-term project in the framework of the traditional accounting. For both data sets we extracted the stochastic component of the project cost fluctuations and found the appropriate statistical description. We calculated the variance on different time scales and established the presence of two statistical regimes: uncorrelated with linear time dependence of variance, and correlated where variance saturates as a function of time. We applied the Ornstein-Uhlenbeck stochastic model and calculated the time scaled parameter of the so-called return force, which characterizes the time period it typically takes for the project cost to return to the estimated value. We predicted the project cost for the near term future and defined the respective cost margins. We formulated criteria for the identification of the potential cost overruns.

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