Signal Interpretation *Out of Control* in The Multivariate Control Chart

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**ABSTRACT**

Quality control in SPC (Statistical Process Control) based on the variable quality characteristic which is divided into two types namely univariate control charts and multivariate control charts. In general, the two diagrams are used for monitoring and controlling (the mean and variability) of production process. Multivariate controlling for both mean and variability in the case of the production process observed when there are out of control for more than one quality characteristic variable and correlated, so we need to identify which variable that cause the out of control signal using multivariate control chart. Recently many methods used in controlling the mean process by identifying the the variable that cause out of control signal, among others, the most popular is the MYT decomposition method (Mason, Young, and Tracy). Meanwhile, controlling multivariate variability to identify variable that cause out of control signal in the literature today is done using the covariance matrix decomposition method. Application performed on process making data plastic ribbon in PT. Yanaprima Hastapersada. This research involved five characteristic variables, namely denier (weight ribbon), bandwidth, strength (tensile strength of ribbons), tenacity (tensile strength of ribbon per denier) and elongation (elasticity of ribbon). Using the MYT decomposition method, variable that cause out of control is bandwidth, but by using the covariance matrix decomposition method to control the variability of the process identified that bandwidth and tenacity variable (strength size of ribbon’s plastic tensile per denier) are cause of the out of control variable.

**Keywords** : MYT decomposition method, covariance matrix decomposition method, out of control signal
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