Abstract
The problems in the present investigation were the reprocessing and claims for delay; causing low quality, which could be affecting the productivity. Therefore it was necessary to apply a methodology of process improvement, based on tools and statistical thinking, being the Six Sigma methodology and its phases (Define, measure, analyze, improve and Control) the best adapted to the case study. After applying the first three phases of this methodology and to be a non-experimental research is determined that the quality improved and productivity also increased, taking a positive economic impact.

Keywords
Reprocessing, delay, quality, productivity, six sigma.