

# Improving optical pipeline through better alignment and calibration process

November 24, 2021

## 1 Introduction

Dimensional metrology and alignment methods are significant and vital during different manufacturing processes. Dimension inspection processes play a crucial role in controlling the position accuracy of production [?]. P. Maresca et al identified the trends in metrology associated with quality control at the industrial level as: fast, more precise, safer and more flexible [?]. The highly automated measuring and control systems demanded by the industries could use several approaches to extract more value from traceable measurements [?]. An industrial metrology process is used on industrial systems, components and objects to perform inspections, alignments and measurements [1]. It offers economic argument regarding the effects of intrinsic standard technology advances and considers the measurement information infrastructure's potential impacts on cost-effectiveness and risks for IoT measuring instruments adoption [?]. Metrological systems are based upon the principle of a good alignment system. The inspection and alignment of large scale components with a strict precision were concerned in the high-tech and heavy industry [?]. Good alignment inspection is one of the most important methods to ensure safe measurement [?].

## References

- [1] D. K. Moru and D. Borro, “A machine vision algorithm for quality control inspection of gears,” *The International Journal of Advanced Manufacturing Technology*, vol. 106, no. 1-2, pp. 105–123, 2020.