

### *Abstract*

PT ABC is a company engaged in access network installation, network infrastructure development, NTE (Network Terminal Equipment) management. One of the projects being worked on by PT ABC is the FTTH cell site project. The project is experiencing delays due to several risks, one of which is the problematic licensing process. These risks have an impact on several factors such as productivity, performance, quality, and cost on the project. Thus, it is necessary to create a risk register and design a risk response from each identified risk.

To create the risk register, the methods used are Failure Mode Analysis (FMEA) and Fault Tree Analysis (FTA). The risks that have been identified using FMEA are 40 negative risks, these risks are obtained from 24 activity lists carried out during the project process. The risks were assessed using RPN to determine their priority scale, and the top three risks were identified as root causes using FTA. As a result, there were three to five basic activities that caused the risk. The basic activities were identified based on technical and non-technical factors. From the results that have been obtained, these risks are given a response to deal with these risks. Before making a risk response, it is given an avoid or mitigate category. The result is 3 avoid responses and 37 mitigate risks.

**Keywords - risk, risk response, FMEA, FTA**