This study investigated the Helicopter Maintenance System (PMS) in South Korea Military using simulation called ‘AnyLogic’. I simulated actual maintenance system with personnel pools on computer and ran 100 times for 1 simulation year in order to check feasibility and supportability of personnel organization of the newly applied maintenance system. This system took weather condition, days off, stochastic fuselage condition and input timing into account to depict more realistic condition. I set success threshold to 90%. The results marked only 60% success. It indicates this new system needs more people to work in order to support all of requirements. Also I have done sensitivity analysis for each of personnel pool in order to find the most critical factor among them and the relationship between them. I ran 50 times for each of scenarios. The results showed that the test pilot and inspectors are both critical for the system. In addition, B class and C class mechanics has special substitution relationship so if one is busy, the other support the one. This relationship contributes low failure rate incurred by mechanics groups. Recommendations were made for deeper study of this system. The real world data was not easy to get because of confidentiality and lack of time to operate the new system in real world. The adequate data set is needed to secure more reliable results of simulation.

Major: Industrial Engineering

Educational Career:
Bachelor’s of Environmental Science, BS, 2007, Korea Military Academy

Committee in Charge:
Gene Lee, Chair, Industrial Engineering & Management Systems
Luis Rabelo, Co-Chair, Industrial Engineering & Management Systems
Ahmad Elshennawy, Industrial Engineering & Management Systems

Approved for distribution by Gene Lee, Committee Chair, on April 7, 2017.

The public is welcome to attend.