5. CONCLUSION

After obtaining the result by designing and simulating, there are two things are obtained. First, for the first bending frequency, the stiffener spar that highest increases the natural frequency is the T spar by 22.95%. For the second bending frequency, the stiffener spar that has the highest increase in natural frequency is the I spar of 15.46%. From these two results, only one spar is selected as a stiffener. To achieve the goal of this final project, the spar considered as a stiffener that can increase natural frequency is the T profile spar with the consideration that, first, the spar is slight weight, only adding up to 3.43% of the initial mass while for I spar is 18.06%. The second consideration is that the T spar increases the frequency significantly at the lowest elastic frequency because the lowest elastic frequency is a dangerous frequency or also called the fundamental frequency. The conclusion of this final project is using T spar profile is the most appropriate to increase the aircraft natural frequency for first bending mode which is attain about 22.95%.