



HACETTEPE UNIVERSITY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ELE 401-402 Graduation Project

Development of Long Range Remote Control Device

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Introduction

RF remote control is ubiquitous in modern life. Some remote control applications in the automation field of agriculture, industry and home require working distances of hundreds of meters or in some cases maximum ranges up to a few km. The project involves design and development of a remote control device with a range exceeding 1 km.

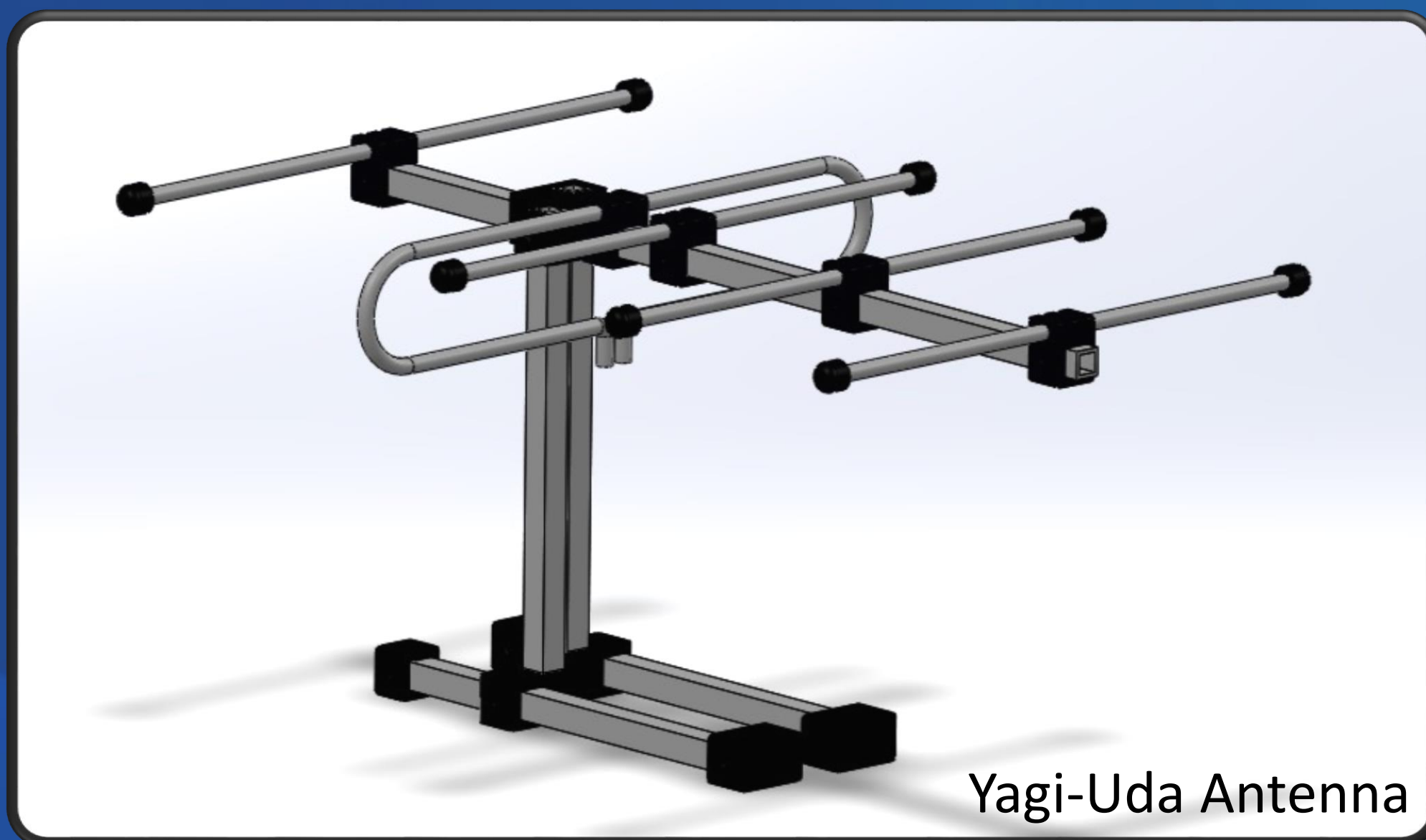
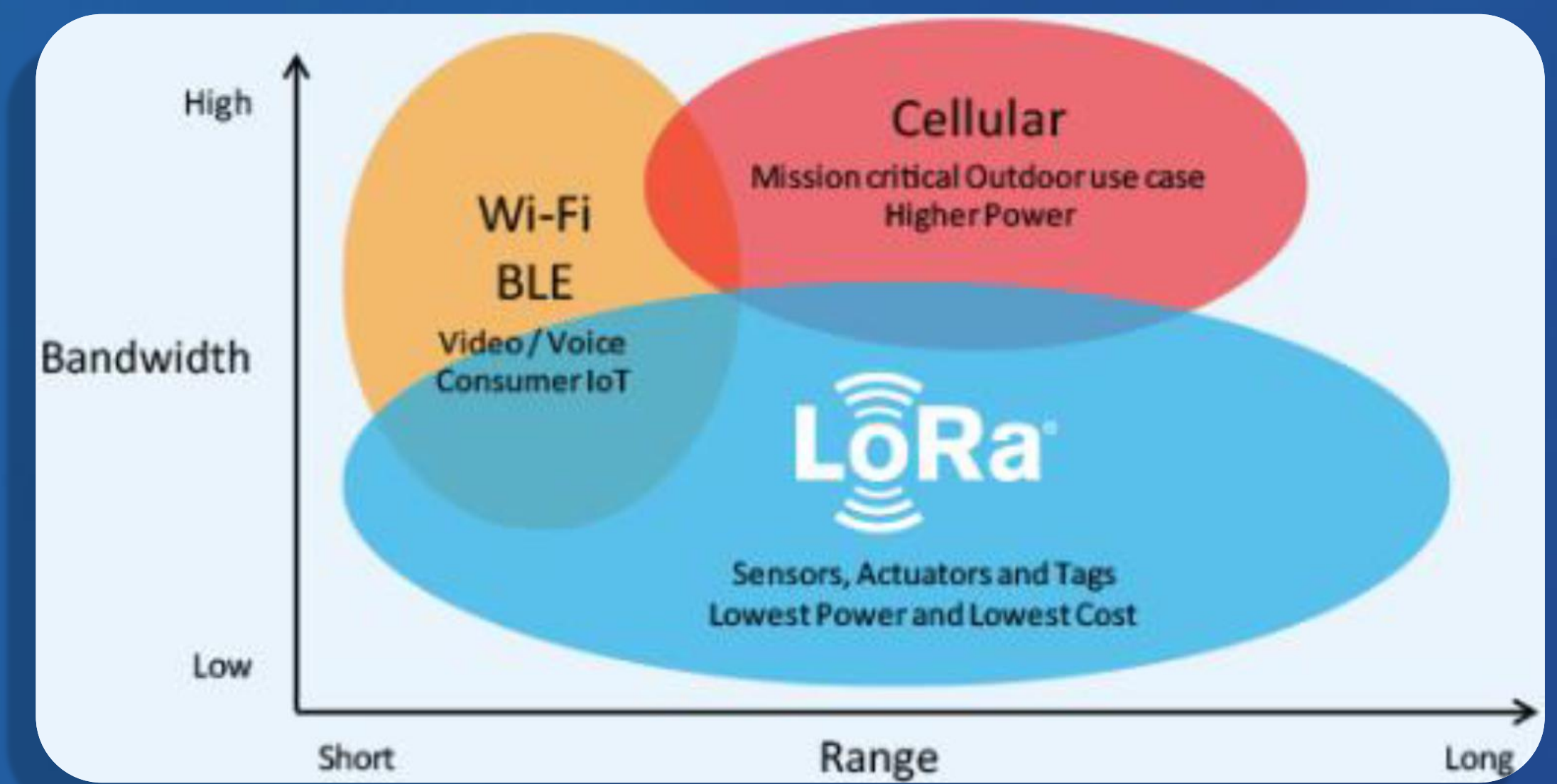
Aim in this project is to set a long range communication system and make an application of it, using IoT. Applications can be made with this infrastructure is excessively many.



Methodology

LoRa Technology is used for implementation of this project. The term "LoRa" (Long Range) refers to the extreme long distance which can be achieved with very little power using a dedicated physical layer (PHY) based on CSS modulation. Transmission takes place in the license-free sub-gig ISM bands.

To achieve a longer range, a Yagi-Uda antenna has been designed and built. Yagi-Uda antenna is the most commonly used type of antenna for TV reception over the last few decades, which is famous for its high gain and directivity.



Yagi-Uda Antenna

