



Final Year Project Showcase Batch-2017 Year 2021

Department: Telecommunications Engineering Programme: Telecommunications Engineering		
1	Project Idea	Human Health Monitoring System via Mmwave Radar
2	Process	Vital sign detection using Mmwave and applying machine learning algorithm to it
3	Outcome	Detect arrhythmia in the human heartbeat.
4	Evidence (Theoretical Basis)	<u>REPORT</u>
5	Competitive Advantage or Unique Selling Proposition (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them). Please keep relevant options, delete the rest of them, and correct the sequence	
a	Cost Reduction of Existing Product	It reduces the cost of staff that's hire to check vital signs of patient every second, Detection of abnormalities in heart rate by a machine will be really cost effective.
b	Process Improvement (which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process)	Project can be made for operational for realtime analysis, using IOT data of patient can be transferred to any location. Furthermore applying Machine learning algorithms for prediction can be made which will be a huge milestone.
c	Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)	SDG#3, Good Health and Well Being Since it is a contactless device, vital sign of a person is detected by a Mmwave Radar and then heart waveform is analyzed by using Machine learning approach through which the heartbeat will be classified into classes that whether the heartbeat of a person is normal it has some kind of problem in it m different kind of waveforms are indications of arrhythmia (abnormalities of heartbeat). Along this the project is showing the heatrate and breathrate of the person. This contact-less device in this time of pandemic is very necessary. Since heart diseases are also increasing day by day this will be a perfect solution for both.
d	Expanding of Market share (e.g. how it expand and what is the problem with the current market)	As world is moving towards virtualization, so need of a contact-less device will be preferred in near future.
e	Capture New Market (e.g. Niche market or unaddressed segment)	This device is monitoring human vital signs, and vital signs monitoring is done in every hospital, clinic and now in vaccination centers too, at homes and offices, we cannot ignore the need of checking it anywhere. It can be made operational on airports, railway stations too where passenger before bording in can check their vitals properly without wasting time and without coming in contact with the machine or paramedics.

f	Any Environmental Aspect (e.g. carbon reduction, energy-efficient, etc.)	It's contact-less device so it will make ensure to not to spread any transmissible disease in between people. This is making this project very environment friendly especially in this time of pandemic.
g	Any Other Aspect	Heart related diseases could be cured on time as this device detect arrhythmia in person's heartbeat.
6	Target Market (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service	Hospitals, homes, old age homes, airports, vaccination centers.
7	Team Members (Names & Roll No.)	<ul style="list-style-type: none"> • Areesha Shamim (TC-17023) • Hafsa Aqeel (TC-17024) • Sehrish Ahsan (TC-17026) • Syeda Urooj Fatima (TC-17028)
8	Supervisor Name Internal Supervisor: Dr. Sunila Akbar Assistant Professor NED University of Engineering & Technology External Supervisor: Ashfaq Amjad Khan General Manager SUPARCO	
9	Supervisor Email ID	Dr. Sunila Akbar , sunilaa@cloud.neduet.edu.pk

10- Pictures

