



PROJECT

MOTION CAPTURE OF
RFID TAGS IN 3D
SPACE WITHOUT
LINE-OF-SIGHT.

TRANSMITTER

WIRELESSLY POWERS
PASSIVE RFID TAGS.

RX ARRAYS

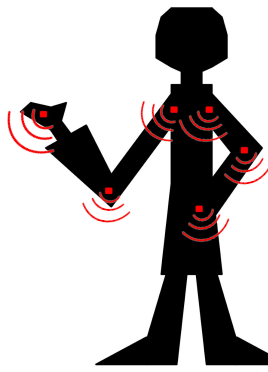
TWO RECEIVER
ARRAYS EACH
FIND ANGLES OF
ARRIVAL (AOA)
FROM RFID TAGS
TO THE ARRAY.
AOA INFORMATION
FROM BOTH
ARRAYS
TRIANGULATES
THE TAGS.

DISPLAY

TAG POSITION UPDATED
IN 3D GRAPHICAL
ENVIRONMENT.

PROGRESS

- A FULL PROTOTYPE RF FRONTEND PCB HAS BEEN DESIGNED AND ORDERED.
- VERILOG CODE FOR DIGITAL IQ DEMODULATION AND CORRELATION MATRIX GENERATION TESTED ON FPGA.
- C++ CODE FOR AOA ESTIMATION AND LOCALIZATION TESTED ON FPGA.



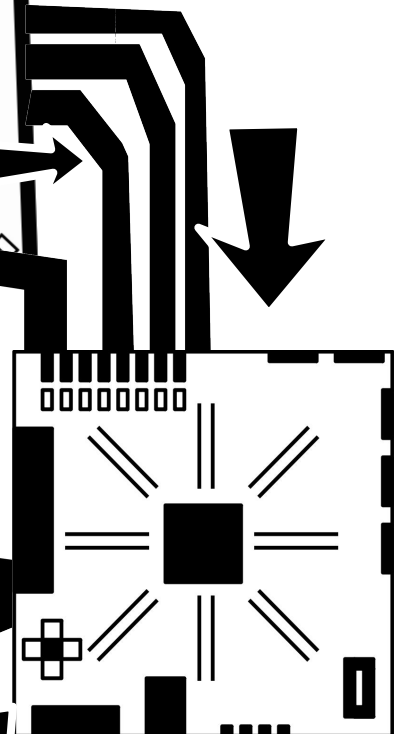
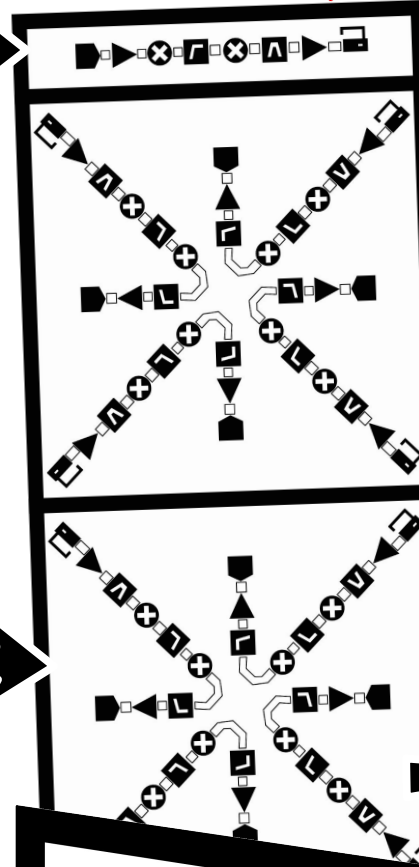
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KAROL WADOŁOWSKI



BRIAN FROST



FPGA

FPGA BACKEND PERFORMS
COMPUTATIONS REQUIRED
TO LOCALIZE THE TAGS.