

PROJECT

REAL-TIME
MOTION CAPTURE
OF RFID TAGS IN
3D SPACE.

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

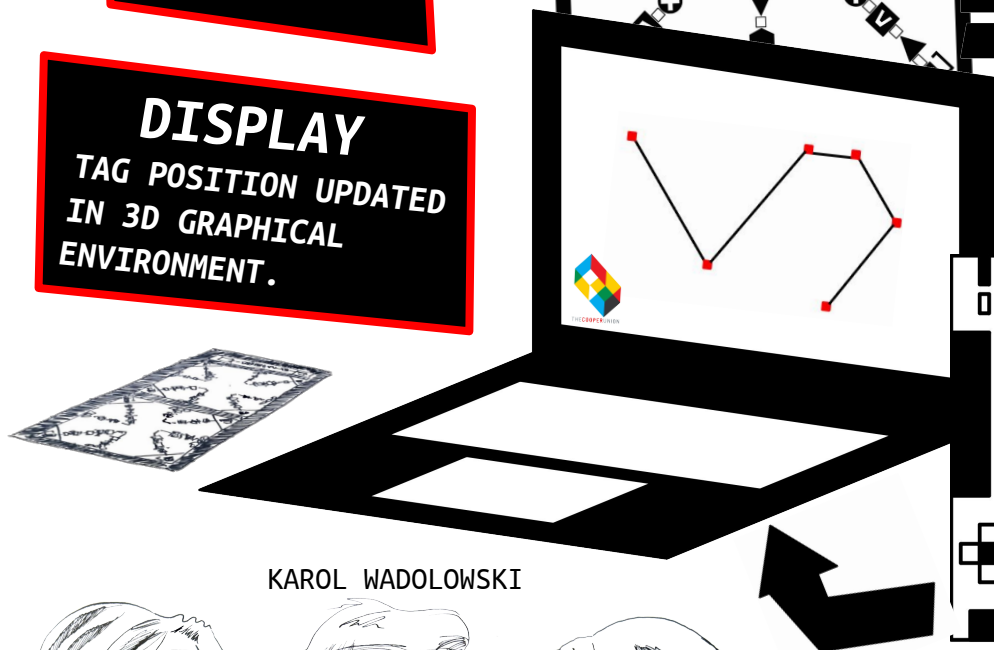
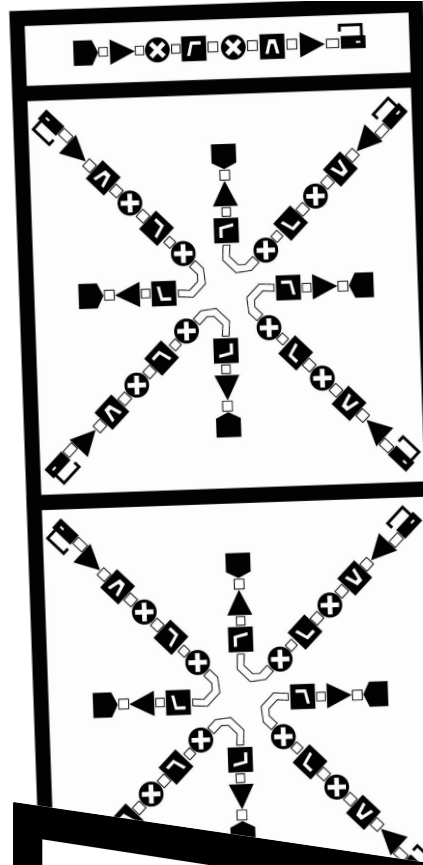
A FULL
PROTOTYPE RF
FRONTEND PCB
HAS BEEN
DESIGNED AND
ORDERED

VERILOG CODE
FOR DIGITAL IQ
DEMODULATION
AND CORRELATION
MATRIX
GENERATION
TESTED ON FPGA

C++ CODE FOR
AOA ESTIMATION
AND
LOCALIZATION
TESTED ON FPGA

FPGA

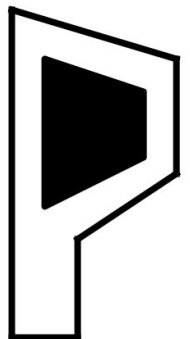
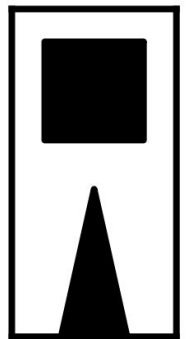
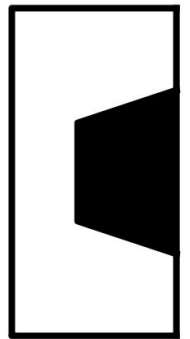
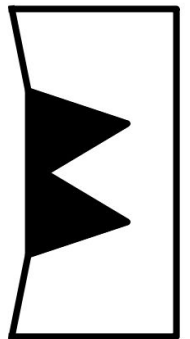
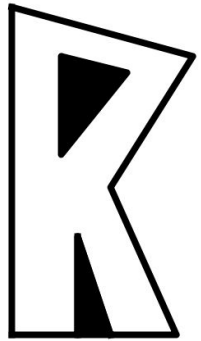
FPGA BACKEND PERFORMS
COMPUTATIONS REQUIRED
TO LOCALIZE THE TAGS.



KAROL WADOLOWSKI



BRIAN FROST



NIKOLA JANJUŠEVIĆ