



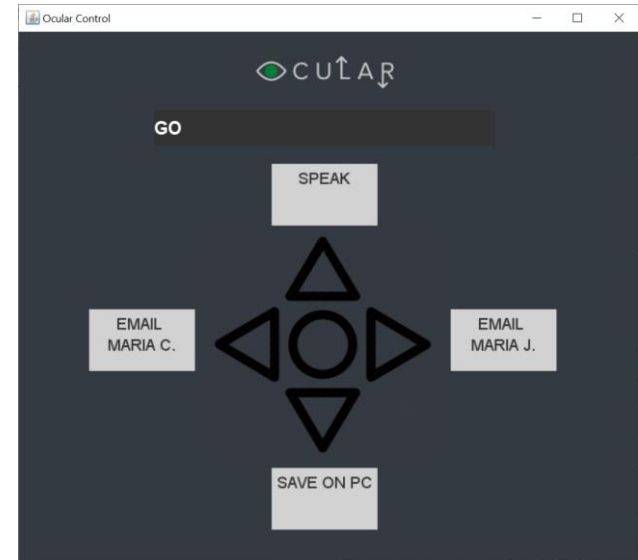
João Matos, Maria Loureiro, Maria Carvalho
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What is Ocular?

 is a simulated communication platform controlled by ocular movement.

The user can write text using simulated eye movements in four directions.

After writing the message, it can be sent it via email, saved in text file, or read out loud!



Ocular Consists of 3 Components



Analog EOG Signal
Processing

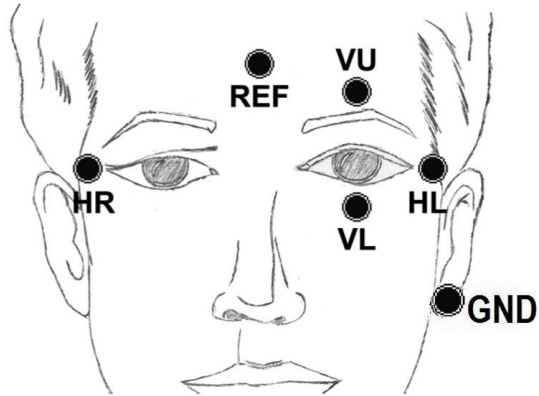


Eye Movement
Simulation

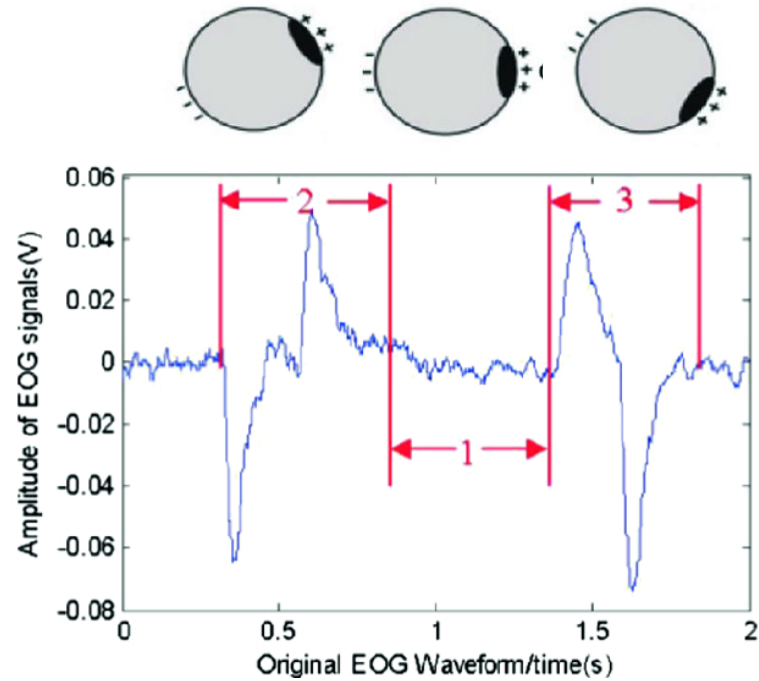


Message Writing
& Exporting Options

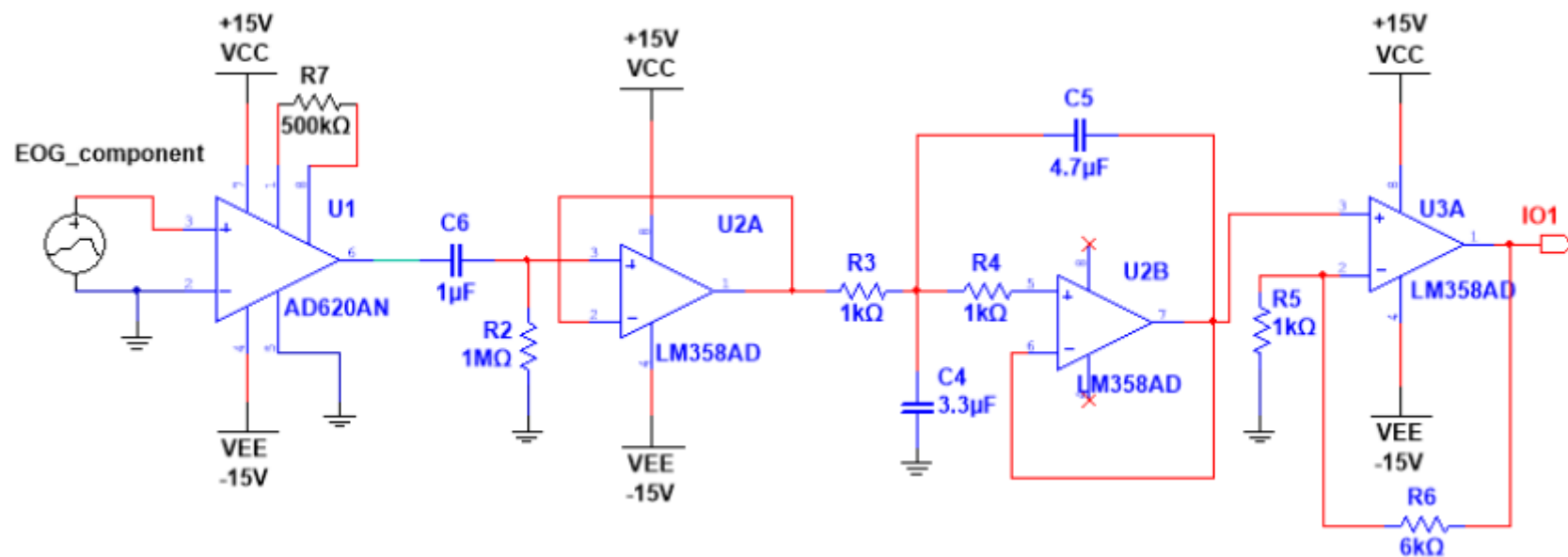
EOG Signal Acquisition



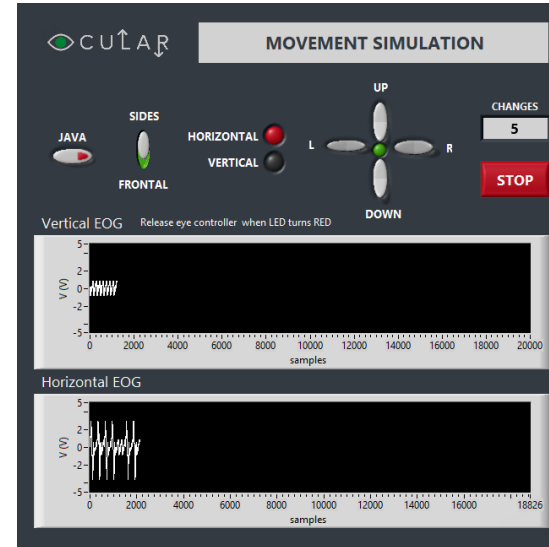
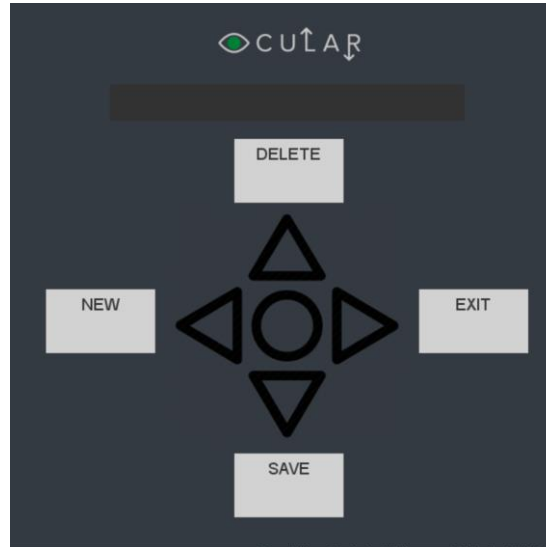
PhysioNet



Multisim Circuit



Programme Demonstration



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Strengths



- User-friendly interfaces
- Users with disabilities and verbal communication limitations to express themselves.
- Allows the user to send emails and reproduce their messages verbally
- Small messages can be written with ease and in a short period of time

W

Weaknesses



- Requires manual input when there is ocular movement
- Depends on three heavy software programmes, which would need to be lighter for a commercial version

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Opportunities



- Text Prediction could be implemented to accelerate the writing process.
- Acquisition of real ocular signals instead of simulating the eye movement
- Transformation of ocular messages into further actions or applications, such as wheelchair control

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Threats



- Similar programmes already exist, especially with image analysis, detecting eye movement not requiring analogic signal analysis, which reduces errors related with EOG signal.
- Excessive ocular movement might cause ocular nerve damage



!&A