MICRON RANGE-OF-MOTION VISUALIZATION

Team-14

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Mentors - Dr. Russell Taylor, Marcin Balicki, Balazs Vagvolgyi
GOAL

- Developing a visual alert assistance system for the surgeons dealing with very small anatomy.
Hand tremors
Force Perception
MICRON

- Tremor Cancellation
- Move actively to compensate

Developed in CMU
SOLUTION
DELIVERABLES

**Maximum**

Improve the robustness.

**Expected**

Visual alert assistance system

Get feedback from the surgeons.

**Minimum**

Test application running and have some overlays displayed.
SOFTWARE DEPENDENCIES

- CISST
- SAW
- QT Creator
- Software Dependency
HARDWARE DEPENDENCIES

- Micron tool
- High processing PC
- Hardware Dependency
- Microscope
- Camera – Capture device
<table>
<thead>
<tr>
<th>Week Starting with</th>
<th>Feb. 4</th>
<th>Feb. 11</th>
<th>Feb. 18</th>
<th>Feb. 25</th>
<th>Mar. 4</th>
<th>Mar. 11</th>
<th>Mar. 18</th>
<th>Mar. 25</th>
<th>Apr. 1</th>
<th>Apr. 8</th>
<th>Apr. 15</th>
<th>Apr. 22</th>
<th>Apr. 29</th>
<th>May 6</th>
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<tbody>
<tr>
<td>Understanding CISST and SteroVision libraries</td>
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<td>Setting up development Environment</td>
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<td>Create a test Application</td>
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<td>Include some overlays</td>
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<td>Communicate with the micron and get the information</td>
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<td>Develop Application using simulated data</td>
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<td>Improve the tracker</td>
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# PHASE-I

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<th>Dependency</th>
<th>Source</th>
<th>Status/Comment</th>
<th>What If ??</th>
<th>Due</th>
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<tbody>
<tr>
<td>PC or Laptop</td>
<td>Self</td>
<td>Acquired</td>
<td>Project Delayed</td>
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<td>Cisst and Stereo Vision Libraries</td>
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<td>Custom Libraries</td>
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<td>Qt Creator - IDE</td>
<td>Open Source</td>
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<td>Use other free IDEs available</td>
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<td>Material to understand Micron better</td>
<td>Dr.Russel Taylor</td>
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<td>Learn Myself</td>
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<td>Documentation of previous work</td>
<td>Marcin Balicki/Balazs Vagvolgyi</td>
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## PHASE-II

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<td>Access to Micron</td>
<td>Dr. Taylor</td>
<td>In Process/Wont need till the completion of Phase I</td>
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<td>Access to Microscope</td>
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PHASE III – NO DEPENDENCIES

PHASE IV – NO DEPENDENCIES
MILESTONES

- Test Application
  - Overlays
    - Getting Info From Micron
  - Debug
    - Tool Tracker
  - Feedback
    - Rigorous Testing
Create a simple test application which will have some overlays like Ascan, Hscan, fps rate etc..
TECHNICAL APPROACH

- Develop an alert system which will graphically warn the surgeon, if the micron is going out the range-of-motion

- Keep on testing the alert system physically, making the micron go out of the range of motion and check the efficiency.

Procedure – Yet to Decide


READING LISTS


QUESTIONS?