**Clients Interview**

We gather a group of individuals to interview regarding problems or issues associated with CNC machines GBRL control-software interface. Our intended population is CNC machine users which can also include engineering students, HackerSpace Members, Dyers and hobbyists. We conducted a remote focus group with five interested CNC users participants to be interviewed about their experience user CNC control software. Three of the participants were engineering students and two of them were independent CNC owners/users. The meeting lasted about an hour and we focused the conversation on the main issues the users face when using software (mainly based on GRBL protocol) to control CNC machines.

We provided the participants with the following questions (Although the questions are written as features we always led and moderated the participants so their responses always were referred more to the UI than the functionality):

1. Which GBRL Sender or interface do you use or have used in the past?
2. How easy or difficult you consider is to use the features of the actual interface you are using.
3. What features would you like to see or included in a new Interface Design?
4. What features would you like to see removed or redesign in a new Interface Design?
5. What features do you think would help the most in learning quickly to successfully operate CNC machines to newbies/beginners?

Users seem to be using a diverse variety of control software depending on their expertise and area of application. About 50% use the Universal G-Code Sender, one uses Match ¾ and the rest uses a variety. For question two we included a short poll for this question and again we have mixes response, some responded Slightly easy, other Slightly difficult, another Moderately difficult and two Moderately easy.

Questions three to five provide more detail in the appendix but here is the summary of the most address points. The actual software the participants use as control interfaces are loaded with a lot of buttons and functions making it difficult for beginners. One of the participants said that it would be great if each button or feature had a Tutorial on each feature/button w/pictures. The main issue for new users to understand, and the group agreed, was machine position vs work offset position. They also stated this is something difficult to be integrated with UI but they referred that maybe something graphic about that would help.

Selection of Probe type should be a Setting, not a requirement for each use, rapid positions should be better integrated into the jogging panel. Lastly, the two major points were an easier way for macro editing for GRBL commands and some way to show the GRBL command in more Human-readable information as GRBL settings are confusing for new users (for example $3=6).