

Project Deliverable B: Need Identification and Problem Statement
GNG 1103 - Engineering Design, Section #A01, Team #14
Faculty of Engineering - University of Ottawa

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Introduction:

For this project we are using Ross video software to aid in the automation of the University of Ottawa's CEED spaces. Our client is the management team of CEED and the objectives of this deliverable are listed below.

1. Identify the needs of CEED
2. Organize and rank the priority of the needs
3. Develop a problem statement that displays the client's needs
4. Develop criteria for benchmarking how success will be measured

Client Background:

The managers of Makerspace and Brunsfield have expressed a lack of organized information about the various activities happening within the spaces. This issue is one that is stopping both CEED spaces from becoming more efficient and effective to those who use the spaces. Currently users have no way to communicate with the CEED spaces when not physically present, however even when users are present in the space there is no organized way for them to access pertinent information (availability of equipment, how active the space is, time left for the day, etc.).

Following our initial meeting with our clients, we have created a table listing the problems expressed by the clients along with a priority rating from 1 to 5, with 1 being an undesirable issue to be solved and 5 being highly critical to the client's needs.

The following data was extracted from the client meeting and then benchmarked:

Client statement	Priority (1-5)	Interpreted needs	Benchmark
Traffic control in both labs (availability of machines, how busy the space is)	5	People knowing the amount of people and the number of machines available will allow them to gauge if there is space for them or not	The standard is Google maps. Google maps gathers data from users to give a live activity level. Our solution will also have a way to input raw data.
SD card control for 3D printers in maker lab	4	Show availability of machines in Makerspace. Method to keep track of SD cards	No current solution is available for tracking SD cards remotely. Will use a sign out system instead.
People getting lost within the building	3	Map system to help users find the appropriate space.	The standard will be ClassFind, must include photos along with an overview map of the floor.
Time remaining for end of the day	4	Clear indication of how much time remains before Makerspace is closed.	Accurate countdown timer, specific to each day of the week and takes into account vacation days.
Complaints	2	System to submit complaints / suggestions.	The standard will be Google Surveys/ SurveyMonkey

Following a thorough analysis of the lecture along with a group discussion, we realized that both clients commented multiple times about the lack of proper traffic control in their labs (availability of machines- time requirement, etc.). A solution to their traffic control problems could be applied to both spaces.

After the lecture, our team held a meeting, and we discussed the fabrication of an interactive map with the use of Ross video dashboard software to display the following:

- Availability of Machines
- Hot zones
- Traffic Control
- Hours left of operation count down
- Labs, in addition to traffic in there

Problem Statement:

Both lab management teams of CEED require a method to control traffic, manage time and an organized hub of information about the availability of resources in the area that is accessible to those not physically present in the space.

Benchmark:

The overall solution must stay under \$100. This is a manageable budget as most of the clients' problems can be fixed through the utilization of Ross video dashboard software. Each problem will be directly compared to what is already available to the public, the corresponding benchmarks are in the table above.

Conclusion:

Following the lecture and our group meeting, we have fully developed an understanding of both our clients' needs, and will aim to complete an interactive map that will include several features to address their needs.