

Customer Needs

The customer needs are interpreted answers provided by the project sponsor when asked questions by the team. Team 518 asked the project sponsor various questions pertaining to the overall objective of the project and received the answers shown in Table 1 below. The responses of the customer were then translated into engineering needs to better define the objective of the project.

Table 1: *Customer Needs*

| Questions | Customer Statements | Interpreted Need |
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| What materials should be used? | The team last year found an innovative composite to use as a lightweight material. | Use available materials and stay within budget and design capabilities. |
| Is there a pre-existing drone to work from or will the drone design be original? | Utilize the previous SD project to interpret a direction for this year's project. | The drone will be designed and constructed with selected lightweight materials. |
| How much of the work should be continued from last year? | With the budget issues we have, figure out what can be used from last year's work. | The drone implements previously purchased components to be cost effective. |
| Are there take-off and landing requirements? | There is no take-off or landing requirements. | The drone will take off and land either unassisted or assisted. |

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| Quadcopter or fixed wing drone? | Look at the work of last year. A quad rotor is harder to control. | The UAV will be of the fixed wing style. |
| What kind of payload is expected to be a part of the UAV? | Payload can be for surveillance or data collection purposes. | The UAV will have a payload. |
| Can the components be outsourced, or will the components need to be self-created? | Decide a payload size/range. Unnecessary to create sensors. | The drone will use outsourced components. |
| What is the size requirement for the UAV? | Look at existing design from last year. | The drone is smaller than double the reference drone. |
| What is the weight restriction of the UAV? | Look at the work of last year but light-weighting can come in forms of efficiency. | The drone will be a category 1 UAV. |

Team 518 asked the project sponsor questions regarding customer needs during a conference call. As a team, the recorded customer statements were translated into interpreted needs. With these interpreted needs, Team 518 knows what the customer wants from the design. As the engineers, we use the wants of the customer to create the functions of our design. Many of the needs are up to Team 518 to decide utilizing the work of last year's group. This allows us to gear the design towards what we choose as our market, what our goals are, and the objective

created. One area that will have future implications on our design is the unestablished budget. Team 518 will be developing a lightweight UAV with the purpose of increasing the flight time and having an incorporated payload.