**Creating a Statement of Work**

for Engineering Consultants

in any Industry

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# Introduction

A statement of work is one of the most important documents in a vendor/client contract, but is often glossed over without much thought to details and completeness. Many times, clients, as well as vendors, are hoping to get the project started quickly, so the drudgery of filling out all details is seen as a costly waste of time.

A statement of work (SoW), done properly, can be eliminate a lot of headaches, difficult meetings, and vendor/client relationship troubles. Done poorly, however, a statement of work can lead to ambiguous deadlines, scope creep, and chaotic deadline activities as the vendor and client attempt to sort out what was agreed upon, and what was not. These problems can also be alleviated by doing projects on a time and materials basis. We can change scope of work quickly with this type of engagement but knowing as many details as we can up front will help us plan the project out further.

Many things a client takes for granted in the day-to-day work of the company, are conveyed in an SoW. These include Location, Deliverables, Standards, and many other areas.

There are many parts to a SoW, and it can seem quite cumbersome. If these parts are examined individually and thought is given respectively, the SoW becomes clear and proves to be a good investment in time.

Listed below are the different areas of the SoW and the prevailing thought behind each section. Read through these to get a better understanding of what is needed in a SoW and refer back to this page when needed.

# Body of SoW

## Purpose

State the purpose of hiring the vendor. Be succinct; this is a very high-level look at what the biggest problems are.

**EXAMPLE**

*This Statement of Work will provide details for hiring Good Automation for the UPG2021 project. The ABC machine is in need of automation for quality control repeatability.*

## Scope of Work

State the scope of work the vendor will be providing. Include all of the areas that the vendor will be working on. If there are areas you don't want the vendor working on, include those also.

**EXAMPLE**

*Good Automation is being hired to design electrically and mechanically, the upgrade for the 2021 project. Good Automation will not be required to design any optical components of the system.*

## Location of Work

Does your company have more than one location? More than one building on its campus? It is important to state exactly where the work will be done so the vendor can plan accordingly. If your vendor needs to travel to your location, travel agreements should be stated here also.

**EXAMPLE**

*Work will be performed at the Irving, TX campus, in the "C" building. Travel expenses for consultants from the Austin area, will be billed with each invoice. Acceptable expenses are:*

* *Flight*
* *Hotel (< $125)*

Appropriate meals

* *Rental Car*
* *Mileage if personal car is used in leu of flight and rental car*

## Period of Performance

State when the project will start and when it will end. If the end date is unknown, state an estimate for the end date. Be as specific as possible in wording such as "mid-July" or "no later than August 31, 2022".

In this section, it is also important to state when work will not be possible. If your company has a certain day for a paid holiday, make sure the vendor also has that day as a holiday and vice versa. State how these conflicts will be handled. Also state how vacations on both sides are handled as well as other times when work won't be possible because of higher priorities like audits, all-employee meetings, internal training, etc.

**EXAMPLE**

*Work will commence on March 1, 2021. Work is estimated to take three calendar months so the end date should be around May 31, 2021. Our company recognizes Good Friday and Memorial Day as paid holidays so work will not be performed on those days. Vendor vacations should be scheduled 90 days in advance. Since this is a 90-day contract, vendor vacation should be factored into any proposed work schedule. Vendor should also schedule a 3-day emergency work buffer for illness, jury duty, death in family or other unforeseen scheduling conflicts.*

*Some portion of work will occur in a large hangar that may not provide complete weather protection. In times of severe weather, work in this area may be halted.*

## Requirements

Many times, a project contract will include a requirements document. If that document exists, refer to it here; otherwise list all requirements, being as specific as possible. If technical specifications are known, put them in this section. The more details the better estimate we can provide. We will have a technical discussion once requirements have at least a few bullet points to flush out all of the details.

**EXAMPLE**

*Good Automation shall be required to complete the following*

* *Mechanical - Complete design of cabinets required for control, including any PCB or other custom parts. Parts to be mounted on rack provided by company.*
* *Electrical - Complete design of all electrical circuitry needed to control the gadget within the constraints of the supplied power.*
* *Software - Complete control software to be embedded in the system. Software shall be thoroughly tested.*
* *Documentation - Complete set of component, assembly, and electrical schematics shall be supplied from vendor.*

## Work Plan

If a project plan already exists, simply refer to it in this section, otherwise, plan out, at a minimum:

* Who does what
* When they do it
* Material lead times

**EXAMPLE**

*Steve will design the electrical circuitry for the cabinet. This must be completed by April 7, 2021.*

*John, with the help of Cassy, will mechanically design and build the electrical cabinets. Work will start immediately and should be complete no later than May 10, 2021, to give time for completion of software and testing.*

*Elizabeth will develop the software, including installation and testing. This must be completed no later than May 31, 2021.*

*Custom machined cabinets require a 3-week lead time, so orders for the cabinets should be placed no later than April 13, 2021.*

## Deliverables Schedule

In this section, state everything the vendor should deliver to you. This includes:

* Documents
* Electronic Files
* Material
* Signatures

Also include anything that you may need to deliver to the vendor. These include:

* Specifications
* Drawings
* Approvals
* Materials for modification

You should also include any shipping arrangements that may be needed. (FedEx acct. number, Only USPS, etc.)

## Standards Used

If your company is bound to Federal or State regulatory agencies, (FDA, FAA, etc.) state which standards are to be used. If your company has an ISO or IEC standard it uses, put that in this section also. Be careful of hidden standards. For instance, if your vendor needs to hire a third party to install a 3-phase power transformer, check with facilities to ensure the subcontractor is properly licensed and the end product can pass local inspection.

**EXAMPLE**

*ABC Consulting Group is being hired to design an electrical box to control an air pump with precision pressure gage used to inflate civil aircraft landing gear, therefore* ***14 CFR § 91.205*** *must be followed.*

## Acceptance Criteria

In this section, state who, or which department, will determine acceptability. Be as precise as possible with the acceptance criteria. Include what tests need to be run, which inspection methods will be used, who will be executing the tests and inspections, etc.

**EXAMPLE**

*Once build is complete, testing will be developed by a team from Good Automation, R & D engineering, and Quality. Testing will be executed by R & D technicians. Tests will be considered complete when all tests are signed off by the testing team.*

## Special Requirements

State things the vendor must do beyond the obvious scope of work. Some of these things may include:

* Progress reports
* Clean room environment
* Personal protective gear
	+ Steel toe shoes
	+ Safety glasses
	+ Hearing protection

**EXAMPLE**

*Due to internal policies, the Systems Engineer must submit weekly progress reports on Friday at close of business, therefore it is incumbent on Good Automation team members to send an email with a paragraph or two detailing progress to the Systems Engineer. This email must be submitted no earlier than Friday at start of business, and no later than Friday at noon.*

*Installation and testing phases of the project, as well as manual measurements, will take place inside the auxiliary hangar, therefore all personnel shall wear shoes with protective toe coverings. This hangar provides a system of heating and cooling, however large doors are often open, dress appropriately for the weather.*

## Deviations

It is almost never the case that the original SoW reflects the actual work accomplished at the end of a project. This is not necessarily a negative characteristic of the SoW; it is just part of the process. As a project develops, new ideas and problems arise and change the original scope of the project. This is actually advantageous to both sides because it allows both sides to expand the project as unknown blockers come to light. Insert a statement of how things will be handled if work needs to deviate from this SoW. This is especially helpful if projects are scrapped or extended.

**EXAMPLE**

*Any alterations to, or deviations from, this Statement of Work should be approved via email, by both the Systems Engineer, and Good Automation.*

## Miscellaneous

If there are important parts of the work assignment that are not covered in the SoW, list them here.

# Types of SoW

There are two levels of Statements of Work. Let’s take a look at which level you should chose and how each are different.

## Rudimentary

The most basic of SoW. This level combines certain sections together so it reduces the complexity of the SoW. It can also be vague, so use of it should be limited to vendors that you can trust. Good Automation can help you fill in all the details needed to start work quickly. Start out with a list of bullet points of things you are looking for in the project. We will help you from there.

## Project-Based

The project-based SoW is a complete Statement of Work. All sections should be addressed individually. If a section is not needed, it should be included, with the statement "N/A" or "Not Applicable" in the body of the section statement. This level of SoW should be considered the default level.

## Rudimentary Shortcuts

### Purpose and Scope

For this type of contract, the purpose and scope are often closely related so the two sections can be combined into one statement if applicable.

**EXAMPLE**

*This project is miniaturizing the Z-1000 bookshelf speaker system. The vendor will assist our engineers in the mechanical and electrical design of the miniaturized speaker.*

### Location and Period of Performance

Assuming the client has only one location, the location and period of performance can also be combined in the rudimentary SoW.

**EXAMPLE**

*The work will be done onsite, beginning one week from today, and will continue until the electrical and mechanical design is complete.*

### Standards Used and Acceptance Criteria

If your organization has an ISO, IEC standard, something simpler, or no standards at all, these sections can be combined. State the name of the person that will be deeming work acceptable. If no standards are used, the name of this section can be changed to “Acceptance Criteria”.

# Conclusion

A Statement of Work is an essential part of hiring an engineering consultant. Attention to details is a must and failure to do so can lead to business problems of all sorts.

Working on a project is usually stressful enough without having to rehash business decisions that everyone thought were settled. Knowing what goes into a SoW can prevent many anxious situations. Let Good Automation make sure your project is done on time and on budget.