**SOPO Template Summary Guidance**

A template for the SOPO follows; please adhere to the format indicated in the template.

The information presented in the SOPO should align with your project proposal.

A critical aspect of the SOPO is the development of Task Descriptions, Milestones, and Go/No-Go decisions. **The Task Descriptions, Milestones, and Go/No-Go decisions included in the SOPO you submit with your proposal may need to be revised if your proposal is selected for negotiation.** Additional guidance on the preparation of Tasks, Milestones, and Go/No-Go decisions is included in this template but is reiterated here for emphasis. Examples of Milestones and Go/No-Go decisions are included in the Milestone Summary Table on the last page of this template.

**Task/Subtask Descriptions:**

Task/Subtask summaries shall **concisely and explicitly** describe the work that will be accomplished. Each summary shall provide 1) a concise statement of the objectives of that task/subtask, 2) a description of the work that will be accomplished and which organization on your team will do the work (Use phrases such as: “Organization A will…, “Organization B will…. DO NOT use phrases such as “The PI will…or “Dr. Name will…) and 3) the outputs of the task/subtask.

**Milestones:**

1. The SOPO should identify appropriate milestones throughout the project to demonstrate success and **measurable** progress towards the project objectives, where success is defined as **technical achievement** rather than simply completing a task. Delivering reports is not an acceptable Milestone. Reports are deliverables **NOT** milestones.
2. At least one Milestone is required for each project quarter.
3. Milestones should follow the SMART rule of thumb, which is that all milestones should be **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely. Milestones should also be CONCISE; not more than 1 or 2 sentences.
4. Milestones should be verifiable and measurable. The criteria for measuring and verifying achievement of the Milestone needs to be specified in the SOPO.

**Go/No-Go Decision Points:**

1. Go/No-Go Decision points are critical project decision points at which specific achievement of project progress can be **measured**. The decision to be made shall be **explicitly and concisely** stated.
2. The SOPO should also **explicitly and concisely** state the specific technical criteria that will be used to make the go/no-go decision.
3. Unless otherwise specified in the RFP, the SOPO should have at least one annual Go/No-Go decision point for any proposed work that will span more than one year.

**NOTE: Teams with currently active REMADE Institute-funded projects may submit an updated version of their current SOPO that includes their current workscope and the additional workscope to be accomplished through their Technology DV&V project and updated Budget that includes their current budget and the extra funding being requested for their Technology DV&V project.**

SOPO Project Template

Prepare SOPO Title page as follows:

REMADE Institute Project

Statement of Project Objectives (SOPO)

REMADE Project Number:  **TBD**

REMADE SOPO Task Number:  **TBD**

Project Duration:  **(months)**

Project SOPO Modification Number: NA

Project Lead Organization:

Project Title:

Project PI:

PI Contact Information:

Phone:

e-mail:

REMADE Project Manager: TBD

Phone:

e-mail:

Date of this SOPO or SOPO Modification:

**[The instructional red and blue text should be removed from your SOPO when completed]**

*Complete the Title page as indicated. The REMADE project number and the REMADE SOPO task number have been entered.*

*All of the information to be included in the SOPO must be consistent with the Application and any Negotiation Strategies upon which the award was selected. Specifically, the SOPO must be consistent with the proposal that you submitted. The SOPO should accurately define* ***what*** *work is to be done and the expected progress to be achieved.*

*The following items should NOT be included in the SOPO:*

* *Dollar amounts.*
* *Specific dates (only include general time frames (i.e. Demonstrate XYZ result by Month 3, not Demonstrate XYZ by June 8th, 2013).*

*Intellectual property information and other aspects of the project that could be considered proprietary or business confidential should be clearly marked in the final version of the SOPO. The SOPO must be marked as follows and identify the specific pages containing confidential, proprietary, or privileged information:*

*Notice of Restriction on Disclosure and Use of Data:*

*Pages [list applicable pages] of this document may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance agreement between the submitter the REMADE Institute and the Government. The REMADE Institute and the Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.*

*The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: “Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure.”*

*In addition, every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.*

1. **PROJECT OBJECTIVES**

*Note: This content must be consistent with the ‘Project Goals and Objectives’ section of the proposal that you submitted.*

Provide a clear and concise (high-level) statement of the project objective and the goals of the project. This section should a) specify the overall project objective, b) provide a few sentences to establish the context of the objective, c) list and summarize the goals that will be achieved during the course of the project to support the achievement of the project objective, and d) summarize the expected benefits of the project in absolute terms such as increase in the annual quantity of recycled material, embodied energy savings per year, emissions reduction per year.

This section should typically be not more than ½ page.

**B. TECHNICAL SCOPE SUMMARY**

*Note: This content must be consistent with the ‘Technical Approach’ section of the proposal that you submitted.*

Provide a summary description of the overall work scope and approach to achieve the project goals and objective. Summarize the technical participation of your cost-share partners indicating those Tasks in which they will make a technical contribution. At least one annual Go/No-Go decision point for any project that will span more than one year is required. List any Go/No-Go decisions at the end of the Technical Scope Summary.

This section should typically be not more than 1 page.

**C. TASKS, MILESTONES, GO/NO-GO DECISIONS**

The section should describe the specific activities including Tasks/Subtasks to be conducted and Milestones and Go/No-Go decisions to be achieved over the life of the project.

**Tasks/Subtasks:** The SOPO should identify the appropriate tasks and sub-tasks for the entire project and provide a summary of what will be accomplished. Tasks should be organized in a logical sequence.

Each task/sub-task is comprised of the following elements: *Task Number and Title, Task Duration; and Task Summary.*

*Task/Subtask Number and Title:* Each task and subtask are to have a unique number and *descriptive* title and indicate the expected duration of the task or subtask in project months. Task/Sub-task Titles should be written in the form of simple action-oriented sentences describing what will be accomplished. (e.g. Conduct a Literature Survey to Identify State-of-the-Art Paper Recycling Processes; Test and Evaluate Physical Properties of Aluminum Series XXXX Samples---DO NOT use titles such as Literature Survey or Physical Properties Testing)

*Task/Subtask Duration:* The start and end date for each major task and subtask should be defined in terms of months from Project Start. If a 6-month task is schedule to begin month one (designated M1), the start and end dates would be M1 and M6.

*Task/Subtask Summary:* Task/Subtask summaries shall **concisely and explicitly** describe the work that will be accomplished. Each summary shall provide 1) a concise statement of the objectives of that task/subtask, 2) a description of the work that will be accomplished and which organization on your team will do the work (Use phrases such as: “Organization A will…, “Organization B will…. DO NOT use phrases such as “The PI will…or “Dr. Abc will…) and 3) the outputs of the task/subtask. **These outputs should also then be listed as deliverables in the section, Project Management and Reporting.**

**Milestones:** The SOPO should identify appropriate milestones throughout the project to demonstrate success, where success is defined as achieving a technical objective rather than simply completing a task. For example, delivering a report is not an acceptable Milestone. Reports are deliverables **NOT** milestones.

Milestones should be CONCISE, not more than 1 or 2 sentences. The **minimum requirement is that each project must have at least one milestone per quarter** for the duration of the project.

Milestones should also follow the SMART rule of thumb, which is that all milestones should be **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely (see table below), and the Proposer should specify the criteria for measuring and verifying achievement of the Milestone in the Preliminary SOPO. To summarize, when preparing your milestones; consider the following two questions; What is the event for the Milestone? How will the event be measured; i.e. how will you know that the milestone has been achieved.

The Milestone numbering convention should include the Task and Milestone number, i.e. Milestone 1.1, Milestone 2.1, etc. If the milestone applies to multiple sub-tasks, it should be placed at the end of the Task and be numbered as Milestone X.Y, where X is the task number and Y is the milestone number. If the milestone applies to a single sub-task, it should be placed immediately after the sub-task and numbered as Milestone X.Y.Z, where X.Y is the subtask, and Z is the milestone number.

**Explanation of SMART Milestones**

|  |  |
| --- | --- |
| Acronym | Clarification |
| S = Specific | Clear and focused to avoid misinterpretation. Should include measures, assumptions, and definitions and be easily interpreted. |
| M = Measurable | Can be quantified and compared to other data. It should allow for meaningful statistical analysis. Avoid "yes/no" measures except in limited cases, such as start-up or systems-in-place situations. |
| A = Achievable | Attainable, reasonable, and credible under conditions expected. |
| R = Relevant | Achievement of the milestone contributes to and is relevant to achieving the objectives of project; is important to moving the project forward/measuring progress against the Go/No-Go decision criteria and successful completion of the project. |
| T = Timely | Doable within the time frame given. |

**Go/No-Go Decision Points:** A go/no-go decision point is a risk management tool and a project management best practice to ensure that, for the current budget period or period of performance, technical success is definitively achieved and potential for success in future budget periods or periods of performance is evaluated, prior to actually beginning the execution of future budget periods. The SOPO should have at least one Go/No-Go decision point for each 12-month period of the project for any project longer than 12 months.

Go/No-Go decision points in the SOPO should 1) explicitly and concisely state the decision to be made and 2) state the specific technical criteria that will be used to make the Go/No-Go decision.

The Go/No-Go Decision numbering convention is G-1 to G-n over project duration.

*Typical Task Structure*

*Below is an example of a typical task structure. While the example illustrates three tasks, your specific project work scope will dictate the appropriate number of tasks and subtasks:*

*Text describing milestones is to be inserted into the task structure at the point where prior completed work is expected to confirm attainment of the milestone. Text describing Go/No-Go Decisions and the criteria established to make the go/no-go decision should be inserted at the end of the Task immediately preceding the Go/No-Go Decision Point.*

**Task 1.0:** Descriptive title phrased as an action-oriented statement (M1-MX) (Use active terms such as Conduct, Define, Establish as the lead word for your Task titles, DO NOT use passive terms such as Definition of…, Establishment of…)

**Task Summary:** Task summaries shall provide a concise statement of the objectives of that task, the work to be accomplished, and which partners are involved. (Use language such as, Company A will…state what they will do) The last sentence of the Task Summary should list the outputs of the task (and its subtasks). (Use language such as, The outputs of this task are: list outputs) The task outputs should also be listed as deliverables in the section, Project Management and Reporting.

**Subtask 1.1:** Descriptive title phrased as an action-oriented statement (M1-MY)

**Subtask Summary:** Describe the specific and detailed work efforts that go into achieving the higher-level tasks and the partners that are involved.

**Milestone 1.1.1** (if applicable): Milestone text should provide 1) a brief statement of the Milestone and 2) the specific criteria that will be used to verify that the Milestone has been achieved. (See examples in the Milestone Summary Table, below.) The Milestones that reflect work performed in a single sub-task should be placed at the end of the sub-task. For example, if a milestone only involved work performed in sub-task 1.1, the milestone would be placed at the end of the sub-task 1.1.

**Milestone 1.1.2** (if applicable)

**Etc.**

**Subtask 1.2:** Descriptive title phrased as an action-oriented statement (M1-MZ)

(Continue until all Task 1 subtasks are listed)

**Milestone 1.1** (if applicable) Milestones that result from of the work performed in multiple sub-tasks should be placed at the end of the Task. For example, if a milestone involved worked performed in sub-tasks 1.1 and 1.2, the milestone would be placed at the end of Task 1.

**Milestone 1.2** (if applicable)

**Etc.**

**Task 2.0:** (continue in the format above until all tasks and subtasks are listed)

**Subtask 2.1**: Title, Date range, Subtask Summary Description

**Subtask 2.2**: Title, Date range, Subtask Summary Description

**Go/No-Go Decision Point:** Insert go/no-go decision description, including the specific technical criteria or basis on which the decision is to be made.

**Task 3.0:** (continue in the format above until all tasks and subtasks are listed)

**D.** **PROJECT MANAGEMENT AND REPORTING**

The requirements for all REMADE projects are identified in the bullets below and should be included in your SOPO as written below. The REMADE Project Manager for your project will typically arrange a schedule for brief calls (typically less than 30 minutes) every two weeks as a touchpoint for your project. There are no reports required for these calls.

Reporting: The following paragraph should be retained in your SOPO.

The recipient shall submit the following project reports to REMADE:

* Monthly status reports (in a format to be provided by REMADE) which include schedule as well as any technical deliverables completed in the month covered by the schedule. Monthly status reports are not necessary in months with Quarterly reports. Monthly reports are due no later than the 15th of the month following the month covered by the report.
* Quarterly status reports at the end of each quarter of the project (in a format to be provided by REMADE). Quarterly status reports will include schedule and budget progress as well as any technical deliverables completed in the quarter covered by the schedule. Quarterly reports are due no later than the 15th of the month following the quarter covered by the report.
* Quarterly technical review (in a PowerPoint template to be provided by REMADE)
* Final technical report (in a format to be provided by REMADE) that provides a comprehensive, cumulative, and substantive summary of the progress and significant accomplishments achieved during the total period of the REMADE Project effort. Final reports are due within 45 days after the end of the (Note: Final reports do not replace the need for the final quarterly report for your project)

Deliverables: Identify the key deliverable for each of the tasks. The deliverables for this project should be described as the outputs that are listed at the end of each Task Summary. Typically, deliverables are not required for subtasks because the subtask outcome or work product will generally be included as part of the Task output/deliverable.

NOTES: 1) formal reports for deliverables are NOT required. 2) The following paragraph should be retained in your SOPO.

Deliverables (to be included in the corresponding monthly or quarterly status reports and/or quarterly technical reviews or final technical report) include the following:

The deliverables from the various tasks should be listed as per the following examples:

1. Task 1: The deliverable from this task is a table identifying the composition of alloy X that was determined through modeling of…

2. Task 4: The deliverable from this task is a table listing the physical properties of…

.

*Please complete Milestone summary table per notes below. Delete the examples provided when no longer needed.*

*Note 1: All Milestones, Go/No-Go decisions and Deliverables should be listed in the Summary Table below. This content must be verbatim from the Milestones and Go/No-Go decisions previously listed in your SOPO.*

*Note 2: Milestones numbering convention: Task Number, Milestone Number i.e. Milestone 1.1, Milestone 2.1, etc. Go/No-Go numbering convention: G-1 to G-n over project duration.*

*Note 3: It is required that each project has at least one milestone per quarter for the entire project duration. It is not necessary that each task have one milestone per quarter.*

*Note 4:* Unless otherwise specified in the RFP, the SOPO should have at least one annual Go/No-Go decision point for any proposed work that will span more than one year.

*Note 5: All milestones should follow the SMART rule of thumb:* ***S****pecific,* ***M****easurable,* ***A****chievable,* ***R****elevant, and* ***T****imely*

**REMADE Project Number:**

**REMADE SOPO Task Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Milestone Summary Table** | | | | | | | | |
| **Recipient Name:** | |  | | | | | | |
| **Project Title** | |  | | | | | | |
| **Task Number** | **Task or**  **Subtask (if applicable) Title** | | **Milestone Type (Milestone, Go/No-Go Decision Point, or Deliverable)** | **Milestone Number (Go/No-Go Decision Point Number)** | **Milestone Description (Go/No-Go Decision Criteria)** | **Milestone Verification Process (What, How, Who, Where)** | **Anticipated Date (Months from Start of the Project)** | **Anticipated Quarter (Quarters from Start of the Project)** |
| 1 | Batch Volume | | Milestone | 1.1 | Demonstrate a 100L batch size with a >2.5% absolute performance improvement over a non-coated device | Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum | 6 | 2 |
| 2 | Coating Area & Uniformity | | Deliverable |  | Description of the deliverable | *Include this phrase for deliverables:* Deliverables are to be attached to the monthly or quarterly report following completion of the deliverable. | 7 | 3 |
| 2 | Coating Area & Uniformity | | Milestone | 2.1 | Demonstrate a 10x10 cm batch size with a >2.0% absolute performance improvement for entire device over a non-coated device | Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum | 8 | 3 |
| 3 | Sustained Process Operation | | Milestone | 3.1 | Demonstrate sustained single-shift process operation at design capacity | Achieve 8-hour continuous operation at process design capacity for 3 production campaigns | 9 | 3 |
| 4 | Literature Search | | Milestone | 4.1 | Validate state-of-the-art/ base case | Identify 5 Competing Design for X Process Models | 12 | 4 |
| 5 | LCA Model Development | | Milestone | 5.1 | Evaluate energy output sensitivity to input conditions | Conduct trial simulations over expected range of input conditions, confirm sensitivity/variability of energy use within +/- 20% of average energy use | 12 | 4 |
|  |  | | Go/No-Go Decision Point | G-1 | Demonstrate 100L batch size with a >2.5% absolute performance improvement over a non-coated device on a 10x10 cm glass slide | Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum | 12 | 4 |
|  |  | | Go/No-Go Decision Point | G-2 | Beta test new LCA model for emissions predictability | Conduct 3 model simulations and compare emissions outputs to literature/empirical data; simulations to be within 10% of literature/empirical data | 15 | 5 |
|  |  | | Go/Go-Go Decision Point | G-3 | Estimate process cost-effectiveness with estimated 10% internal rate of return | Develop capital and operating cost estimates for a process design capacity of 1000 lb/hr; IRR to be >10% | 9 | 3 |