



National Safe Skies Alliance

Program for Applied Research in Airport Security

Guidance for Preparing Problem Statements

INTRODUCTION

The Program for Applied Research in Airport Security (PARAS) is industry-driven and develops near-term, practical solutions to security-related problems faced by airport operators. PARAS is sponsored by the Federal Aviation Administration (FAA) and managed by National Safe Skies Alliance, Inc. (Safe Skies), which is a nonprofit organization. The program is governed by the PARAS Oversight Committee (OC).

All research projects that PARAS undertakes start as **Problem Statements** submitted from one or more airport industry practitioners. A Problem Statement is essentially a justification for funding a research idea.

Because the program has limited funding, it is essential that these funds go to research projects that the industry believes will give the greatest benefit to airports; therefore, a well-designed Problem Statement is important. While anyone can submit a Problem Statement to PARAS, authors will find it helpful to have a good understanding of the airport environment and the way PARAS conducts research.

This document provides guidance to help you turn a research idea into a good Problem Statement. This guidance first describes how Problem Statements are reviewed and selected, and then helps you determine whether your research idea is appropriate for PARAS. Finally, the guidance provides an outline to help you prepare a Problem Statement that effectively communicates your research idea to maximize its chance of receiving funding.

HOW PROBLEM STATEMENTS ARE SELECTED FOR FUNDING

The first step is to gain an understanding of how Problem Statements are used to select research projects for funding. PARAS conducts a thorough, comprehensive review process to ensure funding is directed toward the most promising and worthwhile research ideas. This section summarizes the key steps of the Problem Statement review process.

PARAS Program Officers conduct an initial review of each Problem Statement to check for potential overlap with other PARAS projects and comment on the suggested funding amount. Next, review panels consisting of industry practitioners evaluate each Problem Statement and make a recommendation to the OC as to which should be funded. The industry practitioners who volunteer their time to serve on these panels possess expertise in one or more of the research fields applicable to the Problem Statements and are familiar with PARAS. The Problem Statements are then grouped into two sets: those recommended for funding by the review panels and those not recommended for funding. Program staff then transmits the Problem Statements and the recommendations for funding to each OC member, along with the input received from staff and the review panels. OC members review the Problem Statements, consider all comments, and meet to select which Problem Statements would address the most pressing issues and

produce the most useful research results for the airport community.

Each newly approved project is given a project number. The Program Officer then assembles a panel of technical experts and practitioners who will create a Request for Proposals (RFP) from the original Problem Statement, select a contractor, review periodic deliverables, provide technical oversight of the research, and finally, review and comment on the final deliverable(s).

IS YOUR RESEARCH IDEA APPROPRIATE FOR PARAS?

The aviation security industry is dynamic and expansive, resulting in many challenges and opportunities for research. Nevertheless, not all research ideas can be appropriately addressed by PARAS. This is one of the two most common reasons a Problem Statement may not be selected by the OC. Answering the questions below will help determine whether your research idea is suitable for PARAS.

Does your proposed research idea directly benefit the airport security community?

The OC places the highest priority on research ideas that will benefit numerous airports or groups of airports. A research idea benefitting only a few airports, or whose primary audience is another stakeholder, is less likely to be selected.

Can the proposed research result in recommendations that airports can put into practice?

The ability of airports to implement recommended changes to practice is limited by many factors, including design standards, safety and security protocols, and cooperation with stakeholders. The OC considers these factors to select projects that will likely result in research findings airports will be able to successfully implement.

Can your research idea be implemented without changes to policies or regulations?

Any research that may be expected to result in significant recommendations for federal agencies or may involve change to federal regulations and/or policies must follow a specific process outlined in the Federal Advisory Committee Act (FACA). Because PARAS does not follow FACA requirements, it cannot recommend changes to federal policies or regulations.

Will your proposed research idea lead to a near-term solution?

The goal of PARAS is to provide airports with practical guidance with near-term benefits, typically within 5 years.

Does your proposed research idea seek to close existing knowledge gaps?

Problem Statement authors should be aware of related literature to determine whether their proposed research has been (or is being) addressed. However, because the industry is dynamic, your research idea may update or address the impact of recent changes. It is important to consider what your research idea would actually contribute to the state of knowledge and to be able to explain that as part of your Problem Statement.

Can the proposed research be carried out within the typical project funding and timing constraints of the program?

Your research idea should be able to be completed with a budget between \$125,000 and \$400,000, and within 10 to 18 months. Although it is possible that important research can be conducted with a smaller budget or more quickly than is typical for a PARAS project, the resources associated with your proposed research should generally fall within these funding levels and time ranges. The preferred PARAS projects, therefore, are those that focus on small, solvable problems. If your research idea suggests a sweeping, multi-faceted, and lengthy research effort, consider breaking it down into two or more stand-alone projects that would each produce valuable results and indicate follow-on work that could be performed to provide even greater value.

Is there a high likelihood that the research tasks needed to address your idea can be carried out successfully?

The OC gives significant attention to the likelihood that a feasible research approach exists and can be successfully executed to produce the desired results (i.e., there is a high likelihood that a method exists to gather and analyze relevant data, and that the industry will be willing to participate in the research as needed). The practitioners on PARAS review panels usually have a good understanding of whether the timing is right to undertake the proposed research; they also have a sense of what would be needed to carry out the research associated with your Problem Statement.

Does your research idea avoid promoting a particular practice or product?

While many PARAS projects result in recommendations for best practices, these recommendations are the result of balanced, unbiased, and thorough research. Your Problem Statement cannot, therefore, be designed to promote a policy or a product.

PROBLEM STATEMENT DEVELOPMENT GUIDANCE

If you conclude that your research idea is well-suited for PARAS, the next step is to communicate your idea in the form of a Problem Statement.

The other common reason the OC may not select a Problem Statement for funding is that the statement did not effectively and succinctly communicate a research idea. Keep in mind that your Problem Statement is your only means to communicate the need for and benefit of your research idea. The OC selects projects solely on the contents of the Problem Statement and the comments provided by staff and review panels.

Writing an effective research Problem Statement is not a simple matter, even to aviation practitioners who face serious problems and challenges on a daily basis and are very familiar with the issues that research can help address. While the research need might seem obvious to you, it is important to understand that OC members cannot be experts in all airport security-related topics. Your Problem Statement, therefore, needs to convey enough background and explanatory information about the issue to enable someone who is not well versed in the subject to understand and appreciate what is being proposed and why.

General Considerations

Below are three considerations to keep in mind as you write your Problem Statement. After reviewing these considerations, proceed to the next section, which provides an annotated Problem Statement outline with specific guidance for preparing each section.

- *The Problem Statement must clearly describe the industry's need for and potential benefits of the proposed research to the airport community.* PARAS exists to provide research results that airports can use to help them operate more securely. Your Problem Statement must show how a particular issue could be addressed or solved through your proposed research effort.
- *The research objective must be clearly defined.* The objective describes the results of the proposed research and how those results will help the industry.
- *The Problem Statement must be well-written.* Poor grammar, spelling mistakes, punctuation errors, rambling thoughts, excessive text, and disorganized ideas can negatively affect reviewer response to your Problem Statement. Your Problem Statement should be critiqued by a competent reviewer before you submit it to PARAS.

Specific Problem Statement Development Guidance

The following instructions should help you complete each section of the Problem Statement outline.

1. Problem Statement Title

The title should briefly and immediately convey what the proposed study is about. It does not have to capture every element, nuance, and expected task of the research. Like the title of a book, it should attract the attention of readers and make them want to read further.

Often, the more deeply you are involved in a particular subject, the harder it is for you to step back and see the big picture. You may be tempted to title your Problem Statement something like this:

Collection, Analysis, and Compilation of Current Best Practices for the Design of General Aviation Facilities, and How Their Design Elements Will Impact Security, Capacity, and Operational Efficiency and Contribute to Improved Customer Service

A more succinct title would be:

General Aviation Facility Design

Below are examples of good titles:

Incorporating Sustainability into Airport Security Projects

Regulatory Compliance Costs and the Impact on Small Airports

Best Practices for Assessing Security Technology Life-cycle Costs at Airports

Hint: Look at every word in your title and ask yourself if it is necessary. Most Problem Statement titles can be 10 words or less.

2. Person Submitting Problem Statement and Date

Provide the name, title, and contact information of the lead individual submitting the Problem Statement.

Hint: Because PARAS exists to help airports, the OC desires Problem Statements that are submitted by practitioners directly working for or with airports.

3. Background

The background section is your opportunity to convince the reviewer that your Problem Statement addresses a significant issue and therefore merits funding. The background section should set the context and relate the issue to larger national or regional goals and objectives. If the Problem Statement is about incorporating sustainability into security projects, begin with statements about the overall importance of airport security.

Lay out your background statement in the three-paragraph model presented below:

Paragraph Number	Example
1: Provide context for the Problem Statement.	Describe the current airport practice for controlling access to secured areas.
2: Describe the particular challenges faced by airports regarding current practice.	While smart cards offer an easy way to control entry, they do not provide a positive verification that the owner is the same as the card-holder.
3: Describe the particular research needed and its expected benefit to the challenges listed above.	Research is needed to help airports determine whether the installation of biometric devices to enhance security is a viable option for access control.

Hint: When writing the background section, keep thinking, “Why should my CEO/Director care about this problem?”

4. Objective

The objective should be a very short, concise, and accurate description of the expected outcome from your proposed research. Consequently, if your objective currently reads, “...to develop guidelines for determining whether biometric devices are a viable option for access control including considerations for biometric type, estimating cost savings, and reliability improvements,” you should shorten it to, “...develop guidelines for evaluating biometric devices to control access.”

Hint: Review the guidance on titling your Problem Statement. A very reasonable object statement is, “To develop (insert your title).” Often your objective can be summarized in one short sentence.

IF YOUR PROBLEM STATEMENT IS NOT SELECTED FOR FUNDING

PARAS recognizes the effort required to develop a well-written Problem Statement and the resulting disappointment that may result if it is not selected. We therefore provide Problem Statement authors with the comments received during the review process in hopes that the authors will benefit from the critique.

Be receptive to the comments offered by reviewers of your Problem Statement—such comments will help you write a better Problem Statement in the future. If you have previously submitted a Problem Statement that did not get approved, do not get discouraged. Sometimes projects undertaken by PARAS are based on Problem Statements that were refined and resubmitted. (To be reconsidered, a Problem Statement must be formally resubmitted for review.)

Also, if one of your research ideas presented in a Problem Statement was not approved, a different Problem Statement, containing a different research idea, may be successful.

SUMMARY AND CONCLUSIONS

There are many research needs in the aviation security industry. Some of these address long-range and/or theoretical problems; others address significant, near-term challenges directly affecting day-to-day airport operations. If you believe your research idea falls into this latter category, there is a strong possibility that it could be undertaken by PARAS. To maximize the chance of your Problem Statement being selected, use the guidance we have provided in this document.

Thank you for your interest in PARAS, and good luck!

Problem Statement Preparation Outline

I. TITLE/TOPIC

The Problem Statement title should be no more than 10 words (see Page 4, #1 **Problem Statement Title** of this document).

II. SUBMITTER

Provide the specifics (i.e., name, title, telephone, and email addresses) for the lead individual submitting the Problem Statement (see Page 5, #2 **Person Submitting Problem Statement**).

III. BACKGROUND

In no more than three paragraphs, provide a general description of the problem requiring research (see Page 5, #3 **Background**).

IV. OBJECTIVE

Include a clear, concise statement of the objectives (anticipated products) that are expected to be met by this research (see Page 5, #4 **Objective**).

Submit to:

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