



HOW TO WRITE a Good Risk Statement

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The recently released *Department of Defense Risk, Issue, and Opportunity Management (DoD RIO) Guide for Defense Acquisition Programs* discusses the importance of communicating risks through the use of structured risk statements. It describes how well-structured risk statements help all stakeholders better understand the program risks and enhance system engineering planning and communications. This article expands on that discussion and shares some of our more frequent recommendations for programs to improve risk statements.

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A risk statement summarizes a potential problem that needs to be addressed. The statement communicates the potential adverse event or condition and its consequences on program objectives should the risk be realized. The statement informs other members of the extended program team, program leadership and stakeholders to make them aware and possibly help them make decisions in consideration of the risk.

A clear risk statement ensures that people across organizational boundaries or geographically distributed groups, such as in a system of systems, possess a common understanding of the problem. Poorly written risk statements do not achieve these goals and can be counterproductive. This article further discusses the elements of a good risk statement, various acceptable

formats, and examples of weak risk statements, showing how they can be improved.

Elements of a Good Risk Statement

The recently published *DoD RIO Guide* indicates a good risk statement will include two or, potentially, three elements: the potential event or condition, the consequences and, if known, the cause of the event.

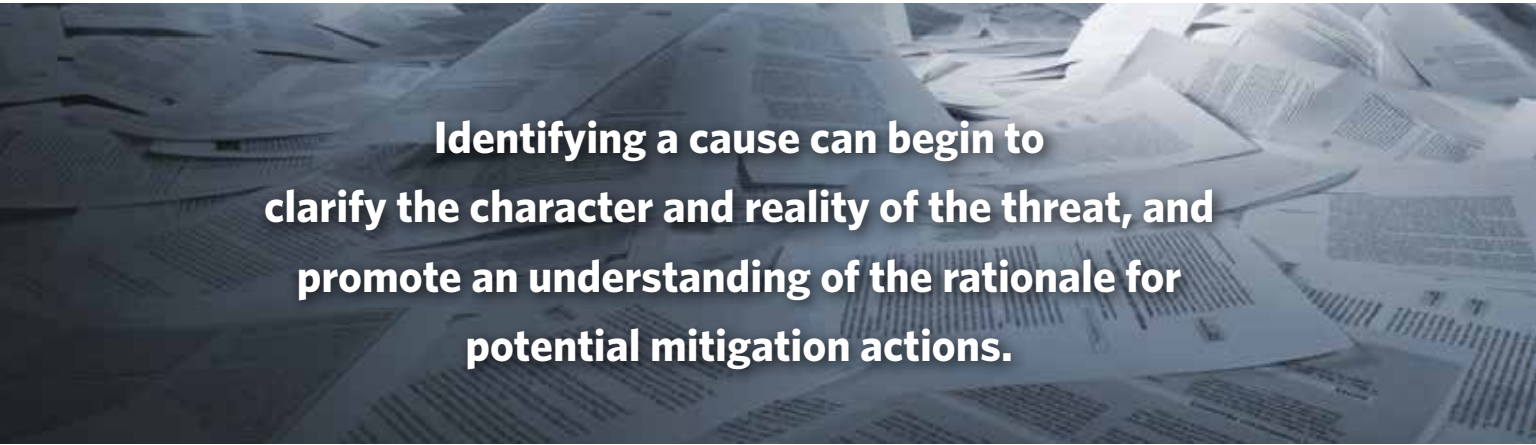
The potential event is a future possible happening that could have an impact on the program objectives. In short, the uncertain event describes something that can go wrong. It might be associated with design or development, technology failure, supplier problem, or any other item that might cause an undesirable condition that will impact program objectives.

If either the root cause or the proximate cause is known, it is helpful to describe it in the risk statement. Including the cause helps clarify what is driving the risk and later will help the program develop a mitigation plan. The mitigation aimed at reducing likelihood may address the proximate cause rather than the root cause. For example, the batteries Program X uses are not reliable and keep failing, so the program manager (PM) elects to switch to a different supplier. In this case, the proximate cause is that batteries keep failing reliability and the solution is to replace them with different batteries. Theoretically, the root cause might have been a bad production process, sloppy quality control, bad specifications, or bad design, etc., or a combination of these causes. These are important factors to investigate if you are the battery manufacturer or a battery PM, but the Program X PM does not address them because the solution to “proximate” cause (bad battery) is to buy from a different source.

increase or the aircraft maneuvering envelope will be reduced (consequence).

This example provides no reason for the concern that wing properties may not be achieved, which leaves open whether this is simply one passing concern among many possibilities or a causal factor posing an actual threat to objectives prompted by observation or known circumstances. Identifying a cause can begin to clarify the character and reality of the threat, and promote an understanding of the rationale for potential mitigation actions. The modified risk statement below provides a proximate cause for the risk. In addition, the modified statement more fully characterizes the impact to the design:

If the program cannot achieve the anticipated structural properties of the wing skin material (uncertain condition) due to the difficulty of controlling processing variables



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Finally, the consequences are the impact the event or condition will have on a program, usually expressed in terms of cost, schedule, or performance. This part of the statement describes the outcome for the program if the risk event or condition is realized.

Risk Statement Format

There are several generally accepted ways to write a risk statement. While the *DoD RIO Guide* highlights the “if-then” construct, there are other equally acceptable methods of defining the key elements of potential event or condition, consequences, and cause (if known). The guide suggests a program adopt one approach and instill a disciplined practice of using that approach. Here are a few approaches to consider:

■ **The “if-then” format** presents the possible risk event or condition (“if”) and the potential outcome or consequence(s) (“then”). If some event or condition occurs, then a specific negative impact or consequence to program objectives will result.

Example: If the program cannot achieve the anticipated wing skin structural properties (condition), then wing weight will

(cause), then the wing design will be 400 pounds heavier or the aircraft maneuvering envelope will be reduced (from 7.0 g [gravitation force] to 6.0 g) (consequences).

■ **Another approach is the “condition-consequence” format.** In this format, the “consequence” is the possible outcome of the existing “condition,” which has the following structure: A condition causing concern or uncertainty exists; therefore, a negative impact or consequence to a program objective may result.

Example: To date, the program is achieving lower-than-expected structural properties (condition) due to processing anomalies with the selected wing skin material (cause); therefore, a heavier wing design or a reduced high-g maneuver capability (7.0 g to 6.0 g) may result (consequences).

■ **A third approach adds a “because” to the statement construct, producing a “because-event-consequence” format.** This leads to statements with the following structure: “Because” of a fact or existing condition, “an event” may occur, resulting in a negative impact or “consequence” to a program objective.

Example: Because the program is experiencing processing difficulties with the wing skin material (cause), the anticipated structural properties may not be achieved (event or condition), resulting in a heavier wing design or a reduced high-g maneuver capability (7.0 g to 6.0 g) (consequences).

Whatever statement structures the program uses, the key objective is to clearly identify the event or condition, consequences, and cause (if known) without being overly complex. A risk statement should be specific and detailed enough to contribute to effective communication.

A clear risk statement can help clarify the “risk” as the actual threat to achieving project objectives. This avoids focusing on non-risks arising from confusion with causes, impacts, or even mitigation actions. Failure to distinguish between these elements will inevitably drive nonproductive efforts. Consistently using a structured language format can help reduce this confusion.

Weak Risk Statements

Poorly written risk statements do not promote understanding or support productive action. Weak statements may be overly general, circular or self-evident. They may confuse risk with cause or consequences, or they may not describe consequences accurately. For example, a program may identify a risk as “inadequate staffing” when in fact the inadequate staffing should be considered a cause that may pose a variety of risks or consequences such as reduced quality, delays, or even workforce turnover.


The following are examples of poorly formed risk statements with a rationale for why they are inadequate.

- Makes an overly general observation:
 - *Weak: Supplier quality problems may cause program delays.* This statement lends no actionable insight into underlying or existing causal conditions and provides only vague impact on program objectives. In contrast, the statement below is more informative.
 - **Stronger:** Because wiring insulation from Supplier A does not meet specifications, it may be necessary to replace wiring in prototype units, resulting in a 30-day delay to start of testing and a day-to-day slip in completing the phase. This statement identifies the cause as the anomalous material delivered by a specific supplier, the nature of the uncertain event, and the contingent impact to program schedule. This more complete articulation of the problem points to additional analyses on potential mitigation steps and alternatives.
- Identifies an issue rather than a risk:
 - *Weak: Fatigue cracks discovered in already delivered vehicles may shorten service life unless remedied.* This statement describes an issue, not a risk. There is no uncertainty about the likelihood of occurrence. The

statement depicts an event that already has occurred, causing a problem with consequences that must be evaluated and addressed.

- Diverts focus from the program’s controllable activities:
 - *Weak: If the program’s funding is withheld due to poor test results, then the program schedule will be jeopardized.* In this case, the potential for curtailed funding is a consequence of the program’s poor test results, which should be the focus of attention but is not directly or centrally addressed in the risk statement.
 - **Stronger:** If the vehicle reliability test performance continues to be below XX mean time between failures during test, then the resulting schedule delay to fix failures could cause a 6-month extension of the overall program schedule and increase cost.
- Separates an actual risk from inadequate execution or poor quality effort:
 - *Weak: If the design analysis does not account for the range of expected environmental conditions, then the design may not function in the field.* This is not an actual risk because it is known that a design that neglects to account for operating environments will have negative consequences for system performance. In effect, this is saying, “If we don’t use sound engineering practices, our product will suffer.” Such inadequate analysis is an issue that should be preemptively avoided or corrected.
- Announces an unavoidable programmatic event and consequence as a risk:
 - *Weak: If a 5 percent budget reduction is imposed on our program due to announced departmental budget constraints, we will have to renegotiate the contract.* This statement is weak because no mitigation action can be provided for this predicted fact-of-life event, and when it occurs, it will be an issue, not a risk. It is a discrete event outside of the program office’s control.

Summary

An important element of risk management is a clear articulation of the risks. The key requirement for a good risk statement is that it clearly identifies the event or condition, the consequences on program objectives, and cause (if known). Disciplined use of structured formats can help in describing a risk, produce more effective risk statements, and avoid weak statements that lead to confusion. Risks should be monitored and statements updated (a living document/plan) as the program progresses and gains knowledge. The *DoD RIO Guide* (<https://www.acq.osd.mil/se/pg/guidance.html>) provides additional information on risk and the nature of potential risk drivers as the program moves across life-cycle phases. 

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