

Space Technology Advanced Research (STAR) Evaluation Criteria



		NOT SELECTABLE	SELECTABLE, LOW	SELECTABLE, HIGH	HIGHLY RECOMMENDED
PROBLEM DEFINITION	PROBLEM BEING SOLVED	Undefined problem scope.	Somewhat defined problem scope.	Adequately defined problem scope.	Very well defined problem scope.
	PRODUCT SUMMARY	Fails to describe intended solution.	Partly describes intended solution.	Adequately describes intended solution.	Clearly and concisely describes intended solution.
RELEVANCE TO AFRL NEEDS	PROBLEM ALIGNMENT	Not aligned with any of the Topic Areas.	Somewhat aligned with at least 1 of the Topic Areas.	Aligned with at least 1 of the Topic Areas.	Perfectly aligned with at least 1 of the Topic Areas.
	PROBLEM MAGNITUDE	Currently fielded solutions deliver satisfactory Air Force outcomes.	Currently fielded solutions deliver mostly satisfactory Air Force outcomes.	Currently fielded solutions deliver mostly unsatisfactory Air Force outcomes.	Currently fielded solutions deliver completely unsatisfactory Air Force outcomes.
	OPERATIONAL IMPACT	If successful, no improvement vs. existing technological approaches.	If successful, slight improvement vs. existing technological approaches.	If successful, significant improvement vs. existing technological approaches.	If successful, radical improvement vs. existing technological approaches.
	SCALE	A fully deployed, mature solution could have only Squadron-level impact.	A fully deployed, mature solution could have Wing-level impact.	A fully deployed, mature solution could have MAJCOM-level impact.	A fully deployed, mature solution could have impact across the Air Force and potentially DoD.
	DEGREE OF INNOVATION	No departure from existing technological approaches.	Slight departure from existing technological approaches.	Significant departure from existing technological approaches.	Radical departure from existing technological approaches.
SCIENTIFIC AND ENGINEERING VIABILITY	SCIENTIFIC FEASIBILITY	No scientific basis for presented approach.	Incomplete scientific basis for presented approach.	Credible scientific basis for presented approach.	Convincing scientific basis for presented approach.
	ENABLING TECHNOLOGIES	Relies on nonexistent or unavailable technology.	Relies on emerging, cutting edge technology.	Relies on proven technologies.	Relies on Air Force-fielded technologies.
	ALTERNATIVE TECHNICAL APPROACHES	No examination of alternatives.	Partially refutes alternatives.	Adequately refutes alternatives.	Persuasively refutes alternatives.
	TECHNICAL PERSONNEL	Incapable of progress. Team missing essential areas of expertise.	Capable of limited progress. Team recognizes gaps in expertise, but presents no plan to address needs.	Capable of significant progress. Team recognizes gaps in expertise and presents specific plan to address needs.	Highly capable. Team with excellent composition. No near-term gaps in expertise.

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PROJECT PLAN	PROJECT SCHEDULE	Unclear or non-credible project milestones, or timing.	Fairly clear, credible project milestones and timing. Mostly appropriate level of detail.	Mostly clear, credible project milestones and timing. Appropriate level of detail.	Completely clear, credible project milestones and timing. Appropriate level of detail.
	ROM COST ESTIMATE	Incomplete cost estimates.	Unrealistic cost estimates.	Credible cost estimates.	Convincing cost estimates.
	HYPOTHESIS, TESTING, MEASUREMENT	No hypothesis presented, OR presented hypothesis is unreasonable.	This project requires major changes to yield an empirically valid and reliable hypothesis test.	With minor adjustments, this project could yield an empirically valid and reliable hypothesis test.	As presented, this project will yield an empirically valid and reliable hypothesis test.
weight 27.0%	APPROPRIATENESS OF MEASUREMENT	Fails to measure indicators of impact.	Poor measurement of indicators of impact.	Adequate measurement of indicators of impact.	Highly appropriate measurement of indicators of impact.
VALUE / COST	BENEFIT TO AIR FORCE	Expected pay-off does not out-weigh proposed cost.	Expected pay-off may out-weigh proposed cost.	Expected pay-off out-weighs proposed cost.	Expected pay-off substantially out-weighs proposed cost.
weight 8.0%	FUNDING AVAILABILITY	ROM exceeds available budget. No partner contributions identified.	ROM exceeds available budget. Identified partner contributions to address shortfall.	ROM cost is within available budget.	ROM Cost is well within available budget.
PROPOSAL QUALITY	QUALITY OF PROSE	Poorly written. Very difficult to impossible to follow argument. Several spelling or grammar errors.	Moderately written. Sometimes difficult to follow argument. A few spelling / grammar errors.	Effectively written. Convincing, easy to follow argument. No spelling or grammar errors.	Clearly and persuasively written. Compelling arguments. No spelling or grammar errors.
weight 3.0%	DATA QUALITY & ATTRIBUTION	Poorly supported by data. Little to no data attribution.	Partially supported by data. Some data attribution.	Credibly supported by data. Adequate data attribution.	Persuasively supported by meaningful data. Comprehensive data attribution.

Space Technology Advanced Research (STAR) Criteria Explained



Dimension	Sub-dimension	Application Prompt
PROBLEM DEFINITION	Problem Being Solved	What is the operational problem being solved for the Air Force with this innovation? Clearly define the problem you address. Demonstrate the depth of your understanding of the problem's components and stakeholders.
	weight 8% Product Summary	Write a clear, concise description of your product or solution. Without getting into all of the details, explain what your product is and how it addresses the problem you detailed above. The reviewer should have a very clear sense of the solution you are proposing after reading this section, and should be excited to learn more in the rest of your white paper.
RELEVANCE TO AFRL NEEDS	Problem Alignment	How well does your Problem Statement map to our published Topic Areas? Argue the problem you've chosen is a perfect fit with the problems for this Challenge.
	Problem Magnitude	Look specifically at the problem to which this solution maps. Is this a big problem today? How "painful" is today's status quo for the Air Force? Make your best case that the problem(s) you solve are important for the Air Force.
	Operational Impact	Looking only at the airmen who will be impacted by your solution, argue that their jobs or lives will be significantly improved if your solution is adopted. What is the impact of your solution for an airman vs. today's solutions?
	Scale	Look into the future to a time when your solution is both technically mature and fully "transitioned" (actively in use by airmen.) Describe the scale of your impact within the context of the Air Force.
	weight 27% Degree of Innovation	Describe what's innovative about your approach? How big a departure from existing clinical / technical approaches is your solution?
SCIENTIFIC AND ENGINEERING VIABILITY	Scientific Feasibility	Is the science behind the solution sound? Convince readers who don't have deep expertise in your field that your innovation is built atop sound scientific and engineering principles. Point to the foundational and proven technologies that you rely on to deliver your solution.
	Enabling Technologies	Do the required enabling technologies introduce added risk? Using mature or proven underlying technologies and techniques helps to lower technical risk.
	Alternative Technical Approaches	Convince a skeptical audience that yours is the best from a technical perspective. Your case is strongest when you convincingly refute the alternatives.
	weight 27.0% Technical Personnel	Briefly list and describe your core scientific and technical team. Do you have the people and technical capabilities you need to successfully complete your proposed project? If not, convince the reader you have a credible recruiting plan and can fill personnel gaps.
PROJECT PLAN	Project schedule	Provide a schedule for your proposed project. Your projected milestones should be realistic and thoughtful.
	ROM Cost Estimate	Provide a rough order of magnitude (ROM) budget for your proposed project. Your projected costs should be realistic and thoughtful.
	Hypothesis, Testing, Measurement	Succinctly and convincingly outline the "what" your project will prove, and "how" you will go about proving it.
	weight 27.0% Appropriateness of Measurement	List the key performance indicators (KPIs) that are most appropriate to measure your progress with this project. Prove these KPIs are the most appropriate possible measurements of success for a project such as this one.
VALUE / COST	Benefit to Air Force	Describe how the Air Force will benefit if you are successful and make the case that your approach represents a best value solution (expected pay-off out-weighs the cost).
	weight 8.0% Funding Availability	If your proposal is of sufficiently high quality, our team will have to determine if it can realistically be funded with our available budget. If your proposal is on the high end of the budget guidelines, please do your best to identify partners from whom additional funding may be available.
PROPOSAL QUALITY	Quality of prose	Prove you write clearly and argue convincingly.
	weight 3.0% Data quality & attribution	Support your arguments with relevant, properly attributed data to enhance your credibility.