

## APPLICATION OF RISK BREAK DOWN STRUCTURE AS A PROGRAMME MANAGEMENT TOOL IN DESIGN & DEVELOPMENT OF ADVANCED FIGHTER AIRCRAFT

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### ABSTRACT

*The purchase of advanced fighter Aircraft is the Government of India's costliest acquisition. Time, cost & meeting the performance requirements are very important parameters as far as design & development of advanced Fighter is concerned. Many of our projects are not completed on time due to technological complexities, poor aerospace manufacturing infrastructure in the country, uncertainties, and risks inherent in R&D work and dynamics of technology control regimes. Delays cause cost overruns and loss of opportunities in scaling up the technological competence ladder and the inherent risk in security preparedness. It will be very difficult for the program managers to justify the delay. In Most of the developing countries, public money / Tax payer's money will be utilized for Defense development programs. Government is answerable to the public about defense spending and trade-off benefits. If there is a delay in development it leads to huge cost escalation and it would be difficult for the Government to provide budget support. Finally, the development program may have to be abandoned and program stakeholders shall be held responsible for this failure.*

*Uncertainties are inherent in design & development of advanced fighter aircraft program due to the complexities involved in advanced technologies, changing security requirements, lack of infrastructure, and non-availability of skilled manpower. In other words, huge Risk is involved in design & development of advanced fighter aircraft. Risk management plays a vital role in addressing this kind of complex program. It is necessary to adopt a suitable execution model for the design & development of advanced fighter aircraft to mitigate risks which could be encountered during the course of design & development. Feasible execution models need to be identified for design & development of advanced fighter aircraft. However to decide on most preferred execution model is not a simple task. Multiple criteria's are involved and suitable program management technique is required to decide on the most preferred execution model. Risk break down structure will provide the required insight about the proposed feasible execution models and it will be useful for the experts to make qualitative judgments to decide on the most preferred execution model. In this paper, an effort has been made to create a risk break down structure for the various feasible execution models and various risk elements have been tabulated in a hierarchical fashion. This shall help the experts in the aerospace domain to make semi-quantitative judgments to carry out a strategic analysis of feasible execution models*

**KEYWORDS:** Military Aircraft, Programmed Management, Cost, Schedule, Performance Requirements, Multiple Criteria, Risk Management, Schedule Risk, Execution Model, Risk Break Down Structure