LINQUEST

MATE
MULTI-ATTRIBUTE TRADESPACE EXPLORATION

WHAT IS MATE?

MATE is a scalable analytic framework for multi-criteria decision making in complex, dynamic, and uncertain environments. It is built upon 17+ years of research at MIT, and is 70% funded by the DoD.

The value-driven framework includes data-supported exploration and analysis of relationships between various cost and benefit metrics and solution characteristics across potential alternatives.

A MATE analysis includes defining the problem or decision space, generating the alternatives and tradespace, and exploring the tradespace through extensive visualization techniques.

MATE is relevant to problems in which decision complexity exceeds human ability to easily identify and weigh potential solutions and has been applied to a broad range of analyses in numerous domains, including energy, defense, transportation, and consumer goods.

FEATURES

• A web-based software application called Making Robust Lifecycle Decisions (MRLD) is being developed to enhance the ability to apply MATE.

• MRLD provides structure for defining the decision space, ingests MATE-framed data and generates detailed, dynamic visualizations of tradespace alternatives.

BENEFITS

• Ensures alignment of solutions to needs.

• Enables comparison of diverse alternatives that are not typically compared.

• Identifies "best value" solutions over time and variations in contexts and needs.

• Identifies the most difficult scenarios – the highest risk uncertainties.

• Reveals insight into complex tradeoffs that can be overlooked with traditional analysis methods.

• Establishes a shared understanding across stakeholders of the impact their perspectives have on potential solutions - and on one another.