Developing Strategies for Improving the Execution of Human Systems Integration

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Objective and Motivation

Research Objective: Improve predictability of HSI programmatic and technical performance through augmentation of leading indicators with HSI considerations.

Motivation: HSI - increasingly important in modern systems
Early consideration = fewer accidents, fewer errors, lower costs

Measuring HSI effectiveness on a program is challenging.

Research Scope: SE Leading Indicators. Widely used in industry. Currently contain weak characterizations in terms of HSI

What are SE Leading Indicators? Conventional systems engineering measures provide status and historical information. Leading indicators use an approach that draws on trend information to allow for more proactive insight.

Research Sponsorship: US Air Force Office of the Secretary of the Air Force (AFHSIB)

Preliminary Survey Insights

Proposed HSI Specific Additions

User Involvement in Design Trends

Informed - aware of user interface, quality, and risk

User Interface - includes, for example, safety, quality, and risk of the design and other variables.

Lead Designers' Process

Informed - aware of user interface, quality, and risk of the design and other variables.

Lead Designers' Process - includes, for example, safety, quality, and risk of the design and other variables.

Prepared Measurement

1. Defined in terms of leading indicator for user interface, quality, and risk of the design and other variables.
2. Defined in terms of leading indicator for user interface, quality, and risk of the design and other variables.

Preliminary Survey Insights

HSI Leading Indicator Subset

Current Leading Indicator Measure

Leaving Indicators - Modified with HSI Characterization

Evaluated for Utility on a scale of 1 (low) to 5 (high)

Preliminary Findings:

Mean expert rating for all proposed indicators fell within 3 – 4 range (medium or better utility)

However, level of disagreement among experts surrounding utility of two indicators (Question Dogs, Trends in HSI Compliance Trends) was relatively higher than most of the indicator set.

For more information, please visit: http://seari.mit.edu