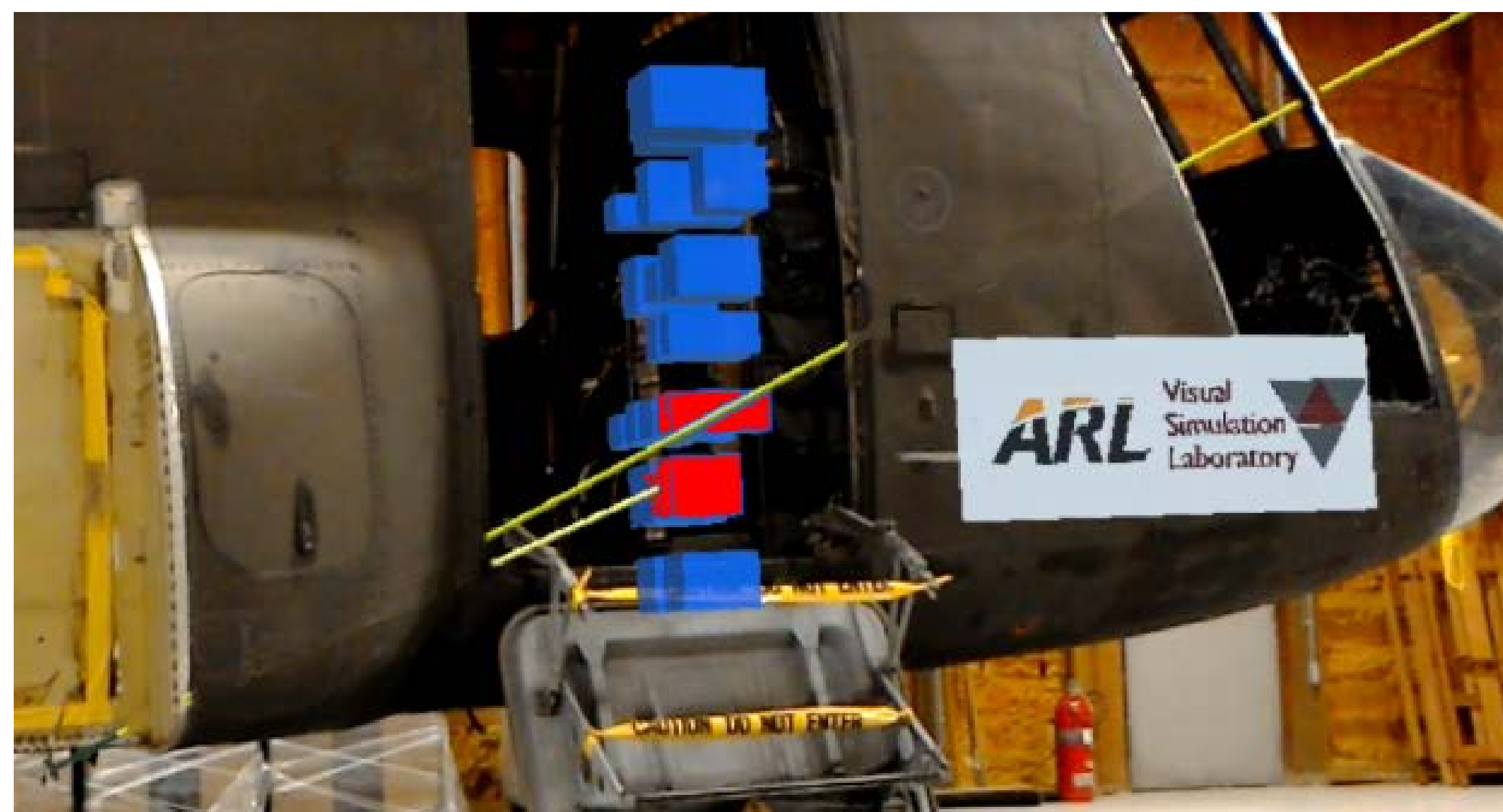


S&T Campaign: Assessment and Analysis
Science of Analysis and Assessment
Key Campaign Initiative

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Research Objective

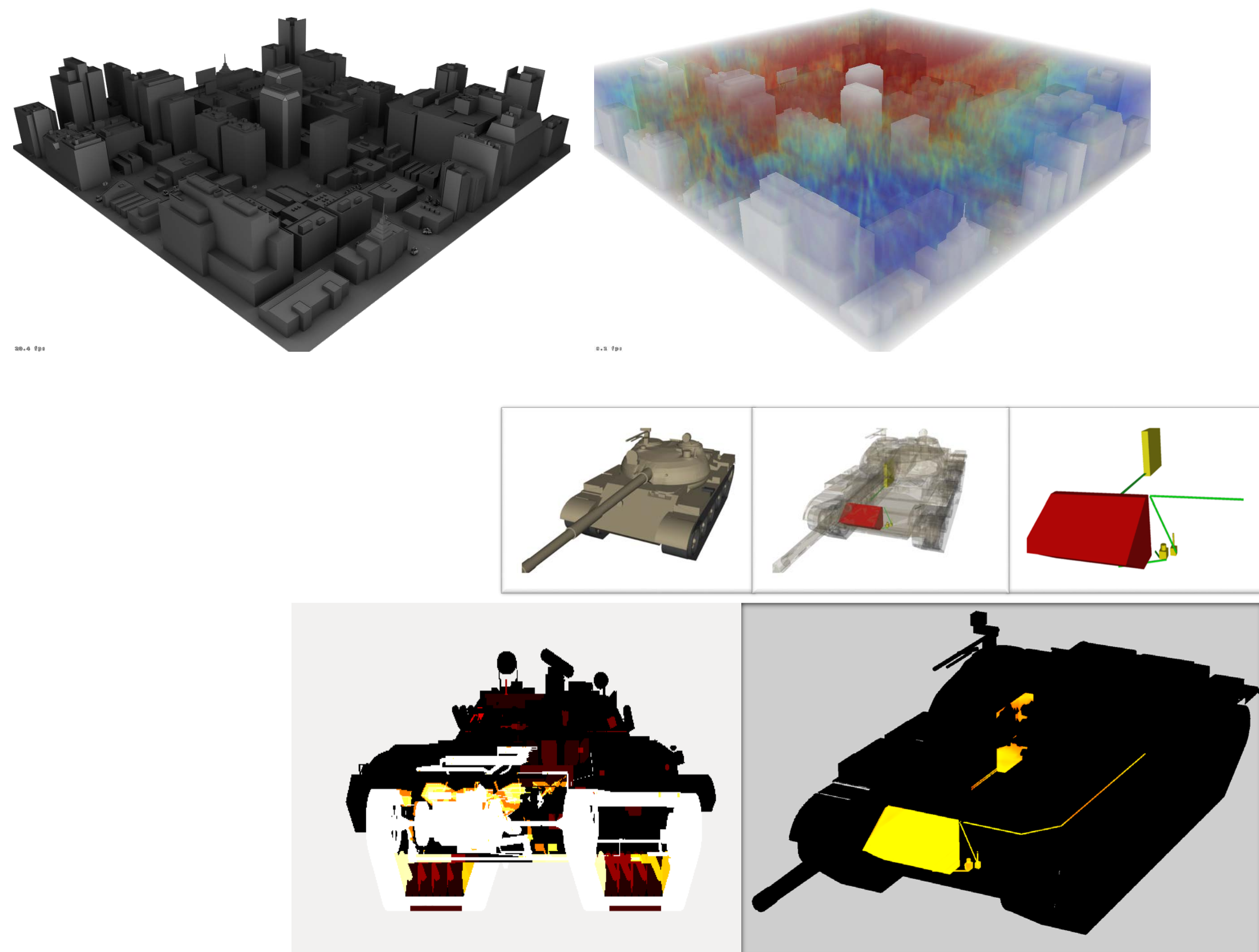
Develop an approach for visual (easy to understand), interactive (quickly available), situational (in the current location and relevant to the task at hand) analysis results to be produced.



Visual Simulation Laboratory (VSL)
Virtual Shot-Line Representation

Challenges

- Delivery mechanisms for visual content are not ubiquitous.
- Usability factors exist for inserting data into real-world context.



Visualization of ARL/SLAD Analysis Products

Technical Approach

- **Near Term (1-5 years, FY17-FY21): Foundations of multi-domain analysis**
 - Leverage current technology for visualization and content delivery. Integrate into existing tools.
 - Demonstrate visual presentation capabilities that make various analysis results intuitive. (FY18)
 - Leverage current technologies to accelerate existing analysis algorithms to make them interactive. (FY19-20)
 - Explore integration of modern algorithms for conducting multi-domain simulation. (FY20-21)
- **Mid Term (6-10 years, FY22-FY26): Military analysis supplants domain analysis.**
- **Far Term (11-15 years, FY27-FY31): Operational insertion.**

Results

- Tools that automatically answer in SLV related meta-questions in a visually intuitive manner.
Examples:
 - “What are the dominant vulnerabilities of a system independent of engagement parameters”
 - “Identify the optimum engagement or operational parameters to maximize mission success”
- Reduce the time and effort required to perform traditional analysis functions by an order of magnitude.

Conclusions

- Products of the SLV analysis will be available in a more timely manner, intuitively comprehensible, and demonstrably relevant, thus making them actionable
- Implementing visual, interactive, situation-specific analysis will:
 - shorten development timelines
 - enable more informed acquisition decisions
 - improve operational training
 - provide effective combatant decision aids
- **This will help insure dominance on the future battlefield.**