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Evaluating/Improving Representation of Intelligence Capabilities and Processes in Combat Modeling with Demonstration in COMBATXXI

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Monterey, California: Naval Postgraduate School

<http://hdl.handle.net/10945/69962>

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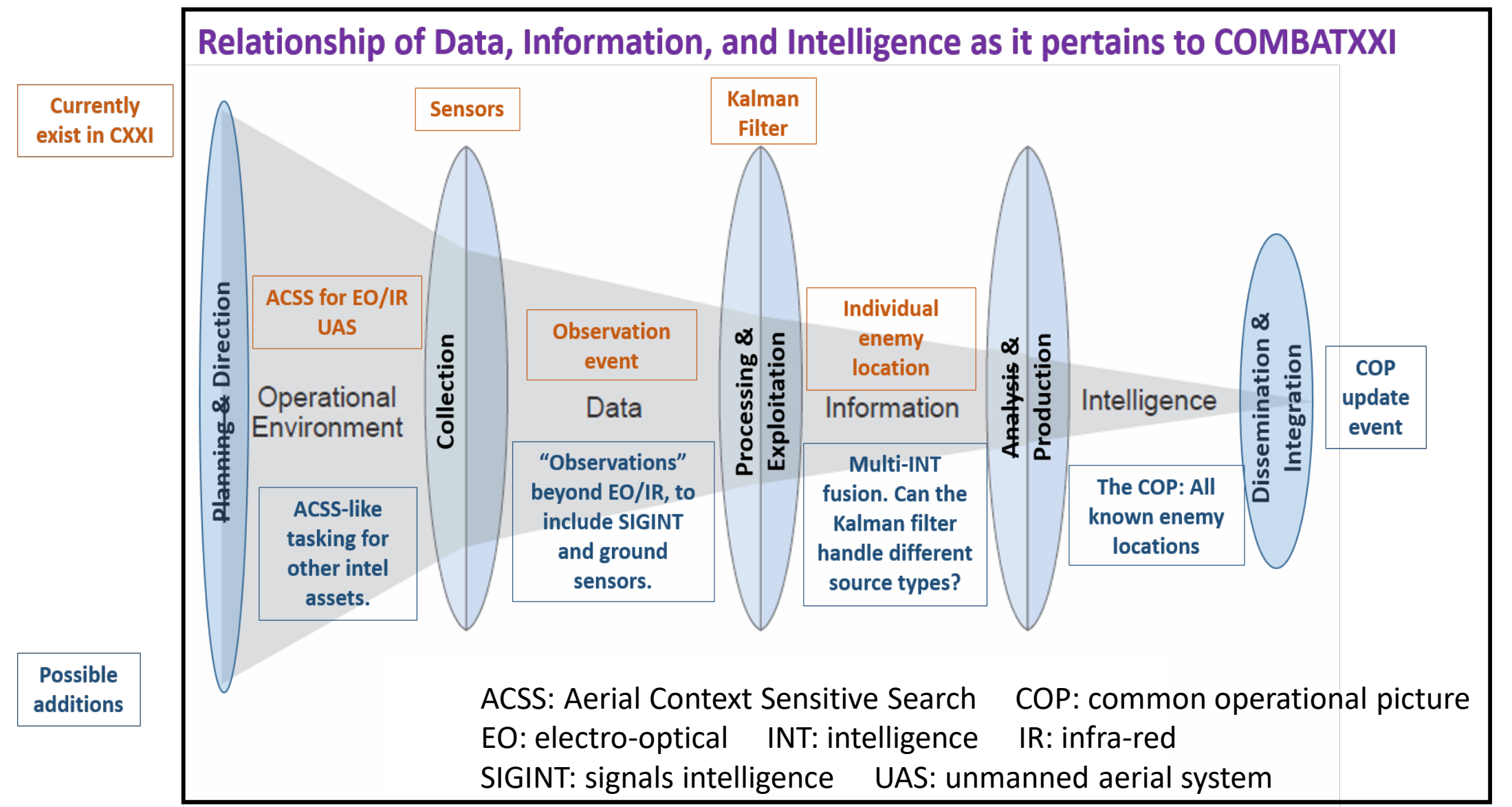
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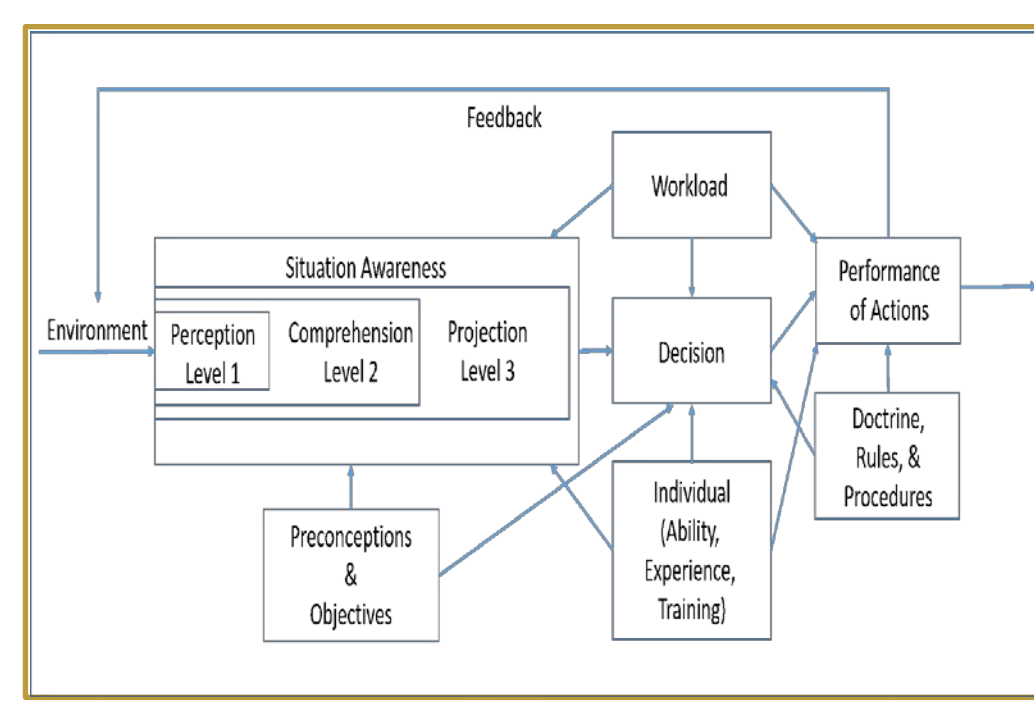
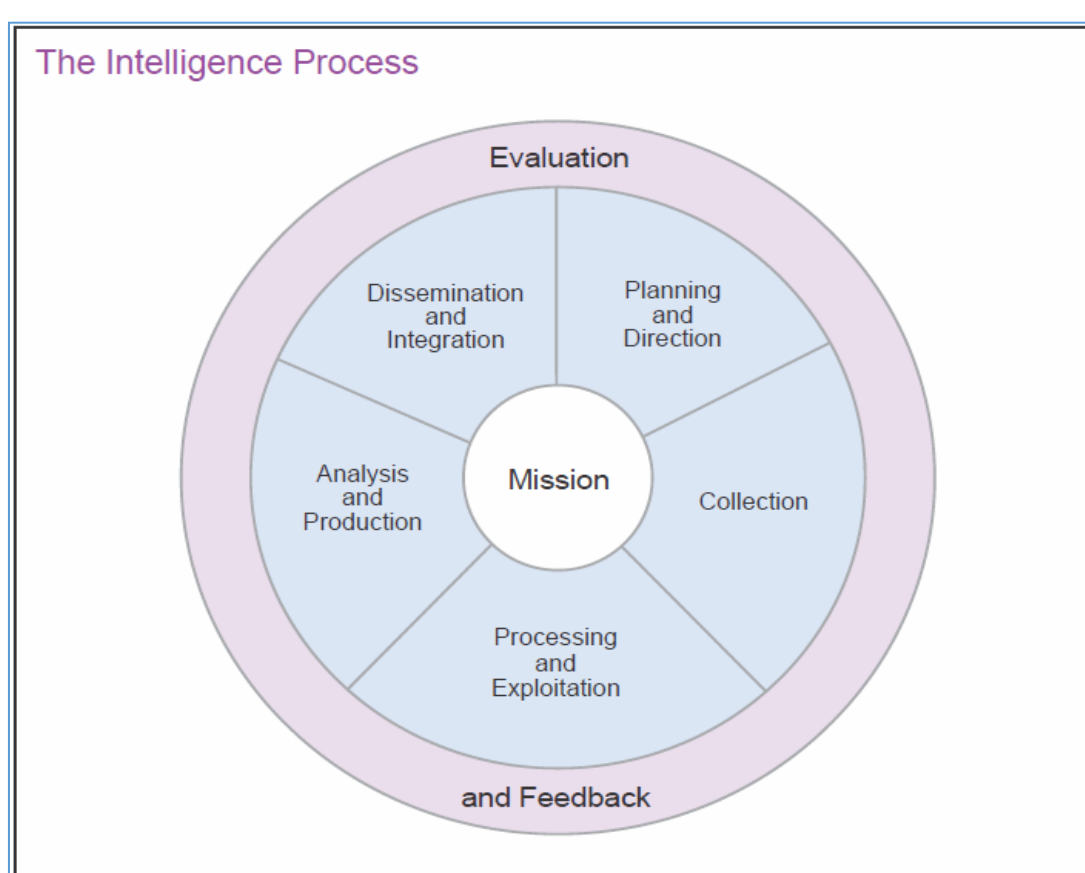
Objectives

- The objective of this Naval Research Program broad area study was to examine representation of the combat intelligence process in combat models, with emphasis on the USMC/US Army Combined Arms Analysis Tool for the 21st Century (COMBATXXI) simulation.
- With an understanding of relevant modeling approaches, identify areas for improvement in COMBATXXI functional capabilities.



Project Scoping in Context of the Phases of the Intelligence Process

Requirements and Conceptual Design

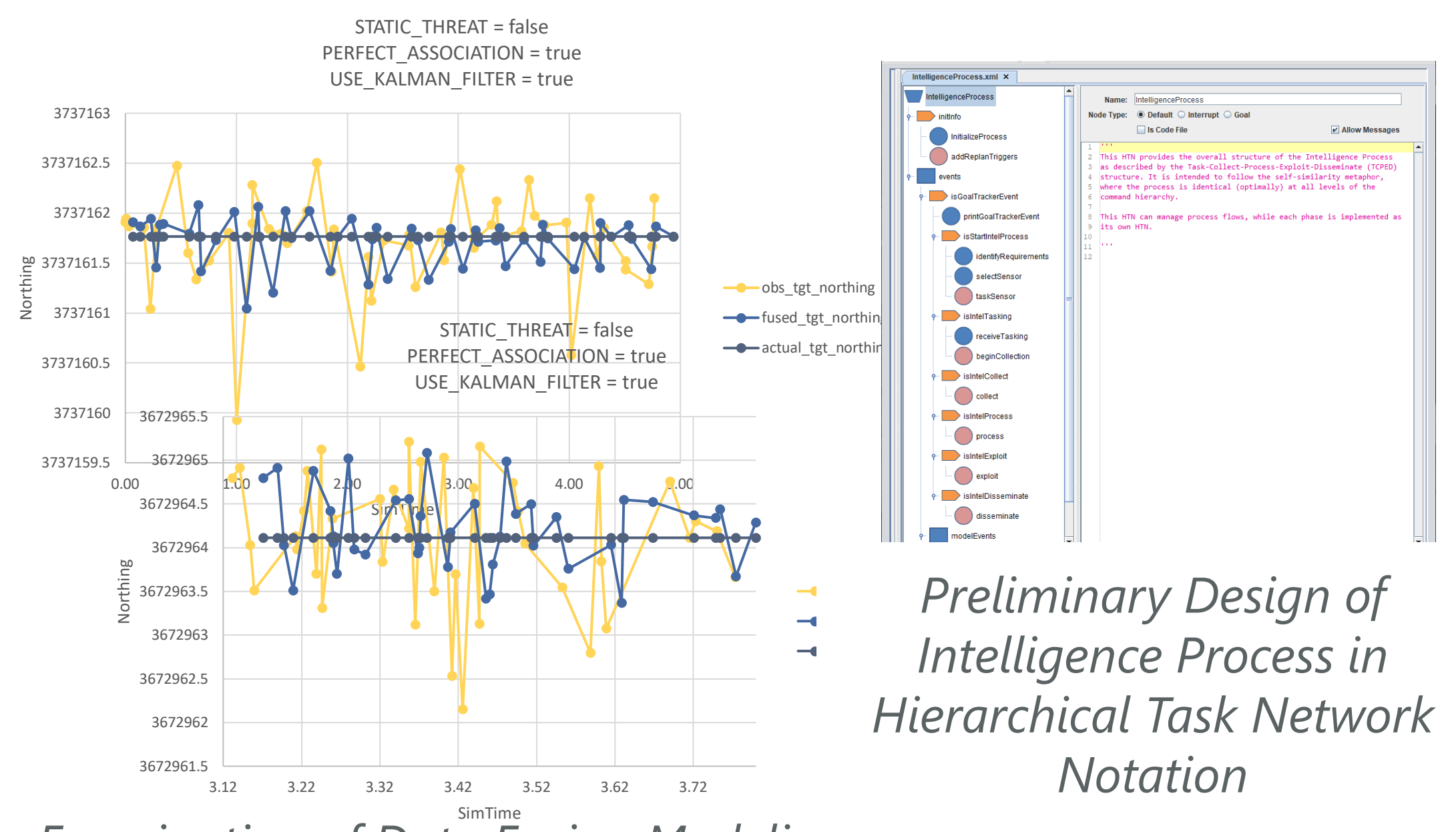


- The study team performed an analysis of USMC requirements for representation of the intelligence process in analytical combat simulations.
- The study team developed a conceptual model of the intelligence process suitable for development in COMBATXXI or other combat simulations.

Foundational Elements of Combat Intelligence

Investigations and Findings

- The study team examined current capabilities for modeling the intelligence process in COMBATXXI.
- The study team created sample behaviors in COMBATXXI for modeling shared situational awareness and demonstrating use of the behaviors in an example scenario.
- The study team identified areas for potential improvement in COMBATXXI capabilities.



Conclusions and Recommendations

- COMBATXXI has significant capabilities across many of the phases of the intelligence process, but lacks a cohesive, systematic representation of that process to support analysts.
- Recommend continuing research and development to address key requirements stated in the 2016 Marine Corps Operating Concept, such as employment of unmanned systems, concept of “every Marine a sensor,” and tailorable common operational picture.
- Recommend implementing identified improvements to the COMBATXXI data fusion logic.
- Recommend developing unit and entity behaviors representing all phases of the intelligence process.
- Recommend using improved representation of the intelligence process to examine the complex interplay of intelligence with the quality of communications and human interpretation.



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Topic Sponsor: Operations Analysis Directorate, MCCDC

NRP Project ID:
NPS-20-M027-A