

Milestone #2

- Interim Report
- PDF mailed to aske@darpa.mil
- Link to relevant documentation
- Link to code
- Report Contents
- Definition of initial VDSOL for epidemic outbreak and response. Design VDSOL specification for initial domain based on published research, focus on models of H5N1 and H3N2 incidents and responses.
- Design and development of initial AMIDOL Abstract Functional Interface. Specification of AFI primitives: state variables, actions, and predicates.
- Initial AMIDOL machine-assisted inference engine development for prognostic queries on models defined in the VDSOL.
- Investigation of epidemic response domain model. Implementation of Epidemic Response domain model for H5N1 and H3N2. Experiments on counter-factual analysis from models derived from these domains, and to build user stories on analysis, planning, and crisis response.
- Definition of correctness, sensitivity, and uncertainty metrics. Communication of these results using the AFI to provide context in the ontology described by the VDSOL to improve practitioner understanding.

Milestone 2 Report Outline

- VDSOL Definition
- Generic language properties
 - Nouns
 - Verbs
 - Composability
 - UI/UX Description
 - JSON Export Language
- Epidemic VDSOL Toolbox
- AMIDOL Abstract Intermediate Representation
- State variables
- Events
- Input predicates
- Output predicates
- Representation
- Inference Engine Targets
- ODE

- Numerical Solution
- Simulation
- Reward Variables and Reward Models
- Rate reward variables
- Impulse reward variables
- Temporal Characteristics of Reward Variables
- Translation of Reward Variables to IR
- Expressions on Reward Variables
- Design of Experiments and Results Database
- Results Database
- Prognostic Queries
- Model Comparison
- Design of Experiments
- Counterfactual Exploration, Planning, Crisis Response
- Correctness and Uncertainty
- Communication of Results
- Domain Models
- SIS/SIRS
- Stoichiometry
- HIV/Tat Model
- Viral Infection Model
- H5N1 Model
- H3N2 Model
- User Stories