

PARADEVS

ParaDEVS™, developed by RTSync, is a **breakthrough paratemporal simulation engine that replaces slow, sampling based Monte Carlo methods with a deterministic, high speed branching approach.** ParaDEVS computes all feasible futures in a single analytic sweep, giving government and defense organizations unprecedented visibility into uncertainty, rare events, and mission critical decision paths.

Why ParaDEVS Outperforms Monte Carlo Method
Traditional Monte Carlo simulations depend on random sampling and require thousands to billions of runs to approximate uncertainty—often missing low probability, high impact events. ParaDEVS eliminates this limitation entirely.

Key advantages include:

- 1000× faster uncertainty quantification
- Deterministic, noise free outputs with exact probability mass flow
- Complete rare event coverage, not probabilistic sampling
- Full causal traceability for auditability and VV&A alignment
- Parallel, mission scale execution across complex system of systems

Key capabilities include:

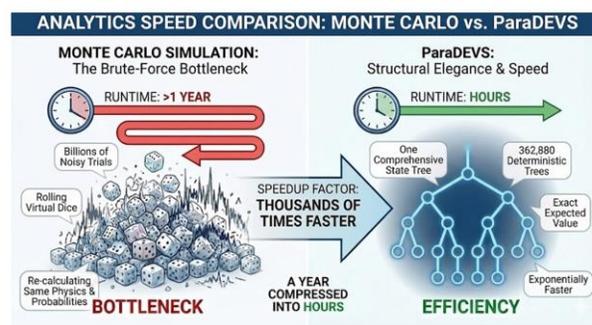
- Homomorphic state merging to prevent exponential blow up
- Dynamic model restructuring without restarting simulations
- Modular DEVS architecture ideal for Digital Engineering and Digital Twins
- Seamless integration with MBSE and SysML workflows
- Support for real time and embedded system analysis

These features make ParaDEVS a powerful engine for mission analysis, system of systems evaluation, and operational decision support.

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PARADEVS
**DETERMINISTIC, HIGH SPEED
 UNCERTAINTY ANALYSIS FOR
 GOVERNMENT & DEFENSE
 MISSIONS**



ParaDEVS:
 INCREASING KNOWLEDGE
 WITH REDUCED
 STOCHASTIC SIMULATION
 EXECUTION TIME

