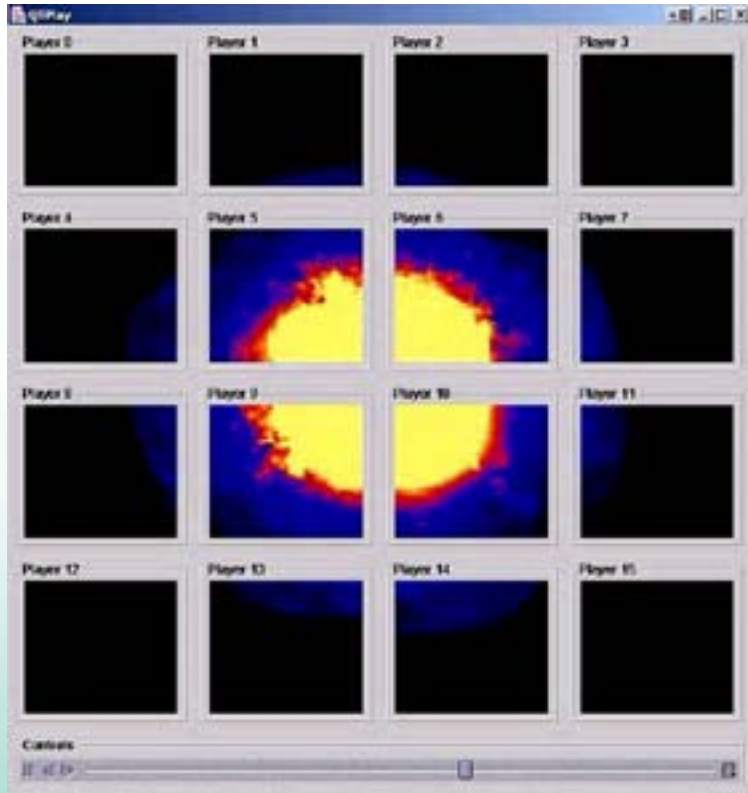


# Agent-based Common Operational Picture Hundreds of Software Agents Analyzing Supernova Simulation Results

Applied Software Engineering Research Group

Computational Sciences & Engineering Division



## Problem Statement:

- Scientists who use simulation models to better understand physical phenomena commonly deal with massive datasets. The output of such a simulation can often be terabytes in size, widely distributed, and may require months of supercomputing time to produce.

## Technical Approach:

- There is a need for a simple and flexible analysis system for scientists to use during the development of simulation algorithms. We have shown that a large system of distributed software agents spread across a massive and distributed dataset is a simple and flexible way to help a scientist to validate simulation output and thereby, improve the simulation algorithm. We have developed a system where a single software agent is responsible for each individual segment of data.

## Benefit:

- Our results illustrate that a large system of software agents is a simple and flexible solution to the problem of data validation during the development of scientific simulation models.

Point of Contact:

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Thomas Potok  
(865) 574-0834  
potokte@ornl.gov

