

We frequently deal with various types and versions of models and services that are simulated in part through communication latency, degradation to decision-making processes, computation attack, or attack/disruption of sensor data and dependencies. When considering the simulation of models and services, several PDU families are useful to provide coverage for the AI and model systems components. Most AI models and systems consume environmental data, including detailed terrain, atmospheric, rf, supply chain, etc. These sources of data are transformed into the following PDU families: Information Operations, Synthetic Environments, Entity Management, Entity Information/Action States, Cognitive Models, Live Entity, and Simulation Management.

What is most exciting and perhaps valuable when using PDUs is the ability to capture and replay edge-cases discovered dynamically, namely where prior information and assumptions break down, exposing physical, technical, process, or cognitive weaknesses notable for directing various effects. This replay can be informative to scientists, engineers, and policymakers in helping to convey AI system behavior through highly visual synthetic environment simulations.

In summary, after reviewing the various PDU classes, all data appears to map well to the respective message type.