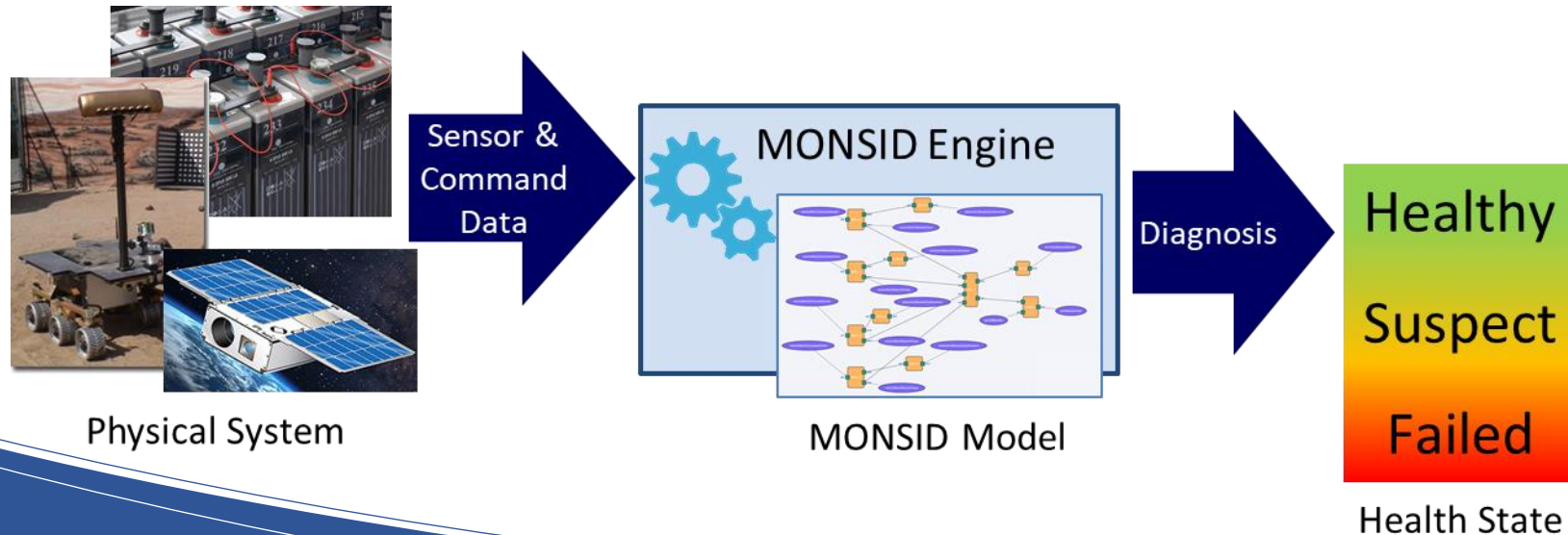


# MONSID

Real-time fault detection and identification for increased autonomy



## MONSID

Is a model-based software package designed to detect and identify hardware faults and off-nominal behavior.

Can be applied to virtually any electro-mechanical system.

Detects faults AND identifies the source of faults, unlike limit checking.

Enables systems to be continuously aware of their own health state. Self-aware systems can respond to problems and replan activities on their own, saving time and money.

### Protect *Your* System with MONSID

Robotics	Power systems
Medical Devices	Operations Support
Test Facility Monitoring	

### MONSID applications

- NASA/JPL Athena test rover
- Caltech state-of-the-art test facility
- JPL Technology Development Programs (Assurance and Autonomy Framework)
- CubeSats (ASTERIA)
- Air Force Research Lab autonomy testbed

# MONSID Fault Diagnosis: Scalable, Modular, Reusable *and* Verifiable

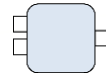
## Use It Where You Need It

- Small footprint, lightweight, minimal RAM requirements
- Designed for real-time monitoring
- Can be used in conjunction with existing fault response/recovery mechanisms
- Update and reuse models on similar systems

## Enhance Integration and Test

- Effective even for sensor-poor systems
- Fault Management design can be started earlier in project lifecycle
- Can uncover control software and operation errors
- Models validated once, can be used in all phases of project cycle
- Offers higher fault coverage than traditional fault monitors/limit checkers

## MONSID Models



- ✓ Represent physical hardware components and their nominal behavior
- ✓ Can be adapted from hardware specs, data sheets, existing models used in control design
- ✓ Fault models not needed
- ✓ Relatively simple models proven highly effective
- ✓ Models are independently verifiable

## MONSID Software



- ✓ Compact and modular API
- ✓ Platform independent
- ✓ C++, C#, C versions available
- ✓ API enables your own tool creation and customizations
- ✓ Leverage the out-of-the-box executive, or a specialized one can be built for your system.
- ✓ Developer's Guide and code examples

## MONSID Toolkit Web App



- ✓ Visual model design
- ✓ Model validation and verification
- ✓ Post-run analysis
- ✓ Diagnosis visualization
- ✓ Analyze fault diagnosis resolution using model topology



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**Want assistance building models and integrating MONSID?  
We're happy to help with that!**

MONSID stands for Model-based Off-Nominal State Identification and Detection.