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Autonomous Systems Capability Taxonomy



1.0 Situation and Self Awareness

- 1.1 Sensing and Perception
- 1.2 State Estimation and Monitoring
- 1.3 Knowledge and Model Building
 - 1.4 Hazard Assessment
- 1.5 Event and Trend Identification
 - 1.6 Anomaly Detection

2.0 Reasoning and Acting

- 2.1 Mission Planning
- 2.2 Activity and Resource Planning and Scheduling
 - 2.3 Motion Planning
- 2.4 Execution and Control
- 2.5 Fault Diagnosis and Prognosis
- 2.6 Fault Response
- 2.7 Learning and Adapting

3.0 Collaboration and Interaction

- 3.1 Joint Knowledge and Understanding
- 3.2 Behavior and Intent Prediction
- 3.3 Goal and Task Negotiation
- 3.4 Operational Trust Building

4.0 Engineering and Integrity

- 4.1 Verification and Validation
- 4.2 Test and Evaluation
- 4.3 Operational Assurance
- 4.4 Modeling and Simulation
- 4.5 Architecture and Design

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https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20180003082.pdf

External Collaborations





Collaboration Mechanisms

- SBIRs
- NRAs
- SAAs
- IAAs
- Etc.



