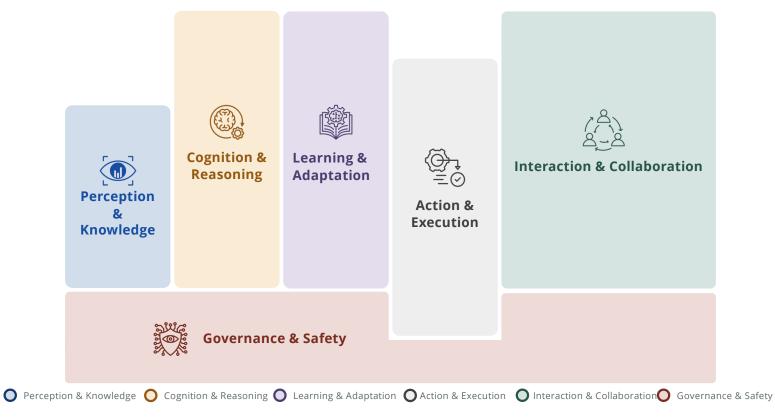


# Al Agent Capabilities Periodic Table (AIA CPT)



## Al Agent Capabilities Periodic Table v1.0





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	<b>CG.PL</b> Planning & Decomposition	<b>LA.MM</b> Memory Management		IC.NL Natural Language	<b>IC.CS</b> Consensus Protocols
	<b>CG.RS</b> Reasoning	<b>LA.RL</b> Reinforcement Learning	AE.TX Task Execution & Implementation	<b>IC.DM</b> Dialogue Management	IC.CF Conflict Resolution
<b>PK.OB</b> Environmental Sensing	<b>CG.DC</b> Decision Making	<b>LA.AD</b> Self-Optimization	<b>AE.TL</b> Tool Usage & API Integration	<b>C.HL</b> Human-in-Loop	<b>IC.SI</b> Industrial Integration
<b>PK.KB</b> Knowledge Access	<b>CG.PS</b> Problem Solving	<b>LA.SL</b> Supervised Learning	AE.CG Code Generation & Execution	IC.AC Agent Communication	IC.ES Enterprise Integration
PK.CX Context & Memory	<b>CG.PP</b> Formal Planning	<b>LA.VM</b> Vector Memory	AE.CX Content Creation & Generation	<b>IC.CL</b> Collaboration	IC.MB Message Brokers
<b>PK.MF</b> Multi-Modal Fusion	<b>CG.PA</b> Plan Adaptation	<b>LA.MS</b> Memory Scoring	<b>AE.TM</b> Tool Lifecycle Management	IC.RB Role Behavior	IC.DS Distributed Coordination
<b>GS.DL</b> Deployment Management	<b>GS.MO</b> Monitoring	<b>GS.EV</b> Evaluation	<b>AE.MC</b> MCP Integration	<b>GS.ET</b> Ethics	<b>GS.PR</b> Privacy
<b>GS.SC</b> Scaling	<b>GS.SF</b> Safety	<b>GS.SE</b> Security	<b>GS.EX</b> Explainability	<b>GS.RL</b> Reliability	<b>GS.TC</b> Trust Management



## **AIA CPT – AI Agent Maturity Levels**

#### **Level 0: Static Automation**

- Pre-programmed responses with no learning or adaptation
- Traditional rule-based Symbolic AI systems and basic automation

#### **Level 1: Conversational Agents**

- Natural language interaction with basic context management
- Customer service chatbots, FAQ systems, voice assistants

#### **Level 2: Procedural Workflow Agents**

- Multi-step task execution with tool integration and role-based collaboration
- Workflow automation, task orchestration, process management

### **Level 3: Cognitive Autonomous Agents**

- · Self-directed planning, learning from experience, sophisticated reasoning
- · Research assistants, predictive systems, autonomous decision-making

#### **Level 4: Multi-Agent Generative Systems (MAGS)**

- · Collaborative intelligence with emergent behaviors and distributed coordination
- Industrial automation, smart city systems, complex orchestration



## **Typical AIA CPT Development Workflow**

