

Contents

RADIANT Glossary & Cheat Sheet	1
Table of Contents	1
1. AI & Machine Learning Terms	1
2. RADIANT Core Subsystems	2
3. Think Tank Features	4
4. AWS Services Used	5
5. Acronyms & Abbreviations	6
6. Database & Storage Terms	8
7. Security & Compliance Terms	9
8. API & Protocol Terms	9
9. UI/UX Terms	9
Quick Reference: CDK Stacks	10
Quick Reference: AI Providers	10
Quick Reference: Governance Presets	11
Document History	11

RADIANT Glossary & Cheat Sheet

Quick Reference for AI Terms, Subsystems, AWS Services, and Acronyms

Version: 1.0.0 | Last Updated: January 29, 2026

Table of Contents

1. AI & Machine Learning Terms
2. RADIANT Core Subsystems
3. Think Tank Features
4. AWS Services Used
5. Acronyms & Abbreviations
6. Database & Storage Terms
7. Security & Compliance Terms
8. API & Protocol Terms
9. UI/UX Terms

1. AI & Machine Learning Terms

Term	Definition
Active Inference	Post-RLHF safety approach using Free Energy minimization instead of reward maximization
Attention Mechanism	Neural network component that weighs input importance dynamically
BERT	Bidirectional Encoder Representations from Transformers - NLP model for text classification

Term	Definition
Chain-of-Thought (CoT)	Prompting technique that makes LLMs show reasoning steps
Embedding	Dense vector representation of text/data in high-dimensional space
Few-Shot Learning	Teaching models with minimal examples
Fine-Tuning	Adapting a pre-trained model to specific tasks
Foundation Model	Large pre-trained model (GPT-4, Claude, Gemini) used as base
Hallucination	When AI generates plausible but factually incorrect information
Inference	Running a trained model to generate predictions/outputs
LLM	Large Language Model - AI trained on massive text data
LoRA	Low-Rank Adaptation - efficient fine-tuning technique that trains small adapter layers
NLI	Natural Language Inference - determining logical relationships between text
Prompt Engineering	Crafting inputs to optimize LLM outputs
RAG	Retrieval-Augmented Generation - combining search with LLM generation
RLHF	Reinforcement Learning from Human Feedback - aligning AI with human preferences
Semantic Search	Search based on meaning, not just keywords
Temperature	Controls randomness in LLM outputs (0=deterministic, 1=creative)
Token	Basic unit of text processing (roughly 4 characters or 0.75 words)
Top-K / Top-P	Sampling parameters controlling output diversity
Transformer	Neural architecture using self-attention (basis of modern LLMs)
Vector Database	Database optimized for similarity search on embeddings
Zero-Shot Learning	Model performs tasks without specific training examples

2. RADIANT Core Subsystems

AGI & Cognition Systems

Subsystem	Description	Key Files
AGI Brain	Central AI planning and orchestration engine	<code>agi-brain-planner.service.ts</code>
Blackboard	Shared memory space for multi-agent coordination	<code>semantic-blackboard.service.ts</code>
Cato	Global AI consciousness service with persistent memory	<code>cato/</code> services
Cognitive Router	Intelligent model selection and routing	<code>cognitive-router.service.ts</code>
Consciousness Loop	State machine (IDLE→PROCESSING→REFLECTING→DREAMING)	<code>consciousness-loop.service.ts</code>
Cortex	Three-tier memory system (Hot/Warm/Cold)	<code>cortex/</code> services

Subsystem	Description	Key Files
Ego System	AI emotional state (confidence, frustration, curiosity)	<code>ego.service.ts</code>
Genesis	Boot sequence and developmental gates for Cato	<code>genesis.service.ts</code>
Ghost Vectors	4096-dimensional hidden states capturing relationship “feel”	<code>ghost-manager.service.ts</code>
Graph-RAG	Knowledge graph + retrieval augmented generation	<code>cortex-graph-rag.service.ts</code>
SOFAI Router	System 1/System 2 dynamic routing (60%+ cost reduction)	<code>sofai-router.service.ts</code>
Twilight Dreaming	Offline learning during low-traffic periods (2-6 AM)	<code>dream-scheduler.service.ts</code>

Pipeline & Orchestration

Subsystem	Description	Key Files
Cato Pipeline	Modular AI task execution with governance	<code>cato-pipeline-orchestrator.service.ts</code>
Checkpoint System	Human-in-the-loop approval gates (CP1-CP5)	<code>cato-checkpoint.service.ts</code>
Compensation	SAGA pattern rollback for failed operations	<code>cato-compensation.service.ts</code>
Method Executor	Executes pipeline methods (Observer, Proposer, etc.)	<code>cato-method-executor.service.ts</code>
Sovereign Mesh	Distributed execution infrastructure	<code>sovereign-mesh.service.ts</code>
Workflow Engine	70+ orchestration methods for task automation	<code>orchestration-methods/</code>

Safety & Verification

Subsystem	Description	Key Files
CBF (Control Barrier Functions)	9 safety barriers that never relax	<code>cato-cbf.service.ts</code>
ECD Scoring	Entity-Context Divergence verification (99.5% accuracy)	<code>ecd-scorer.service.ts</code>
Empiricism Loop	Autonomous skill verification and learning	<code>empiricism-loop.service.ts</code>
Ethics Pipeline	Multi-layer ethical content filtering	<code>ethics-pipeline.service.ts</code>
Reflexion Loop	Self-correction when artifacts fail validation	<code>artifact-pipeline.service.ts</code>
Truth Engine™	Source verification system for all responses	<code>ecd-verification.service.ts</code>

Memory & Storage

Subsystem	Description	Key Files
Flash Facts	Quick knowledge capture and retrieval	<code>flash-facts.service.ts</code>
Grimoire	Procedural memory (learned spells/patterns)	<code>grimoire.service.ts</code>
Stub Nodes	Zero-copy pointers to external data lakes	<code>stub-nodes.service.ts</code>
Time Machine	Conversation forking and replay	<code>time-travel.service.ts</code>
UDS	User Data Service - tiered storage for user content	<code>uds/</code> services

Economic & Governance

Subsystem	Description	Key Files
Economic Governor	Cost optimization and model tier routing	<code>economic-governor.service.ts</code>
HITL	Human-in-the-Loop approval workflows	<code>hitl-orchestration.service.ts</code>
Mission Control	Admin interface for HITL approvals	<code>mission-control/</code>
RAWS	RADIANT Adaptive Weighted Scoring for model selection	<code>raws.service.ts</code>

3. Think Tank Features

Feature	Description
Artifact Engine	GenUI pipeline for interactive outputs
Brain Plan	Execution plan showing how AI will answer
Breathing UI	Visual elements that pulse to show confidence
Concurrent Execution	2-4 simultaneous AI conversations in split panes
Confidence Terrain	3D visualization (elevation=confidence, color=risk)
Council of Experts	Multi-persona consultation with 8 viewpoints
Council of Rivals	Multi-model deliberation for important decisions
Curator	Knowledge graph curation and fact verification app
Debate Arena	Adversarial exploration for stress-testing ideas
Decision Record	Auditable capture of AI reasoning and evidence
Delight System	AI personality and engagement customization
Domain Mode	Specialized configuration for different knowledge areas
Ghost Path	Translucent overlay showing rejected alternatives
Living Ink	Typography that varies weight based on confidence
Living Parchment	Decision intelligence suite with sensory UI

Feature	Description
Magic Carpet	Intent-based navigation system
My Rules	User-defined preferences that customize AI
Polymorphic UI	Interface that adapts based on query type
Sentinel Agent	Background monitors that trigger on conditions
Sniper Mode	Fast, low-cost single-model execution
Spell	Learned pattern in Grimoire that improves responses
Steel-Man	AI-generated strongest version of opposing argument
Timeline	Branch in Time Machine representing conversation path
War Room	Strategic Decision Theater for high-stakes decisions

4. AWS Services Used

Compute

Service	RADIANT Usage
Lambda	Serverless API handlers (62+ admin, 41+ Think Tank)
SageMaker	Self-hosted AI model inference (56 models)
Batch	Long-running batch processing jobs
ECS/Fargate	Container orchestration for LiteLLM gateway

Database & Storage

Service	RADIANT Usage
Aurora PostgreSQL	Primary database with pgvector for embeddings
DynamoDB	Hot-tier caching, session state
ElastiCache (Redis)	Distributed caching, rate limiting
S3	Object storage (uploads, artifacts, backups)
S3 Glacier	Cold storage for compliance archives (7+ years)

Networking & API

Service	RADIANT Usage
API Gateway	REST/WebSocket API endpoints
CloudFront	CDN for static assets and admin dashboards
Route 53	DNS management
VPC	Network isolation with public/private subnets
ALB/NLB	Load balancing for high availability

Security & Identity

Service	RADIANT Usage
Cognito	User authentication and authorization
IAM	Access control for AWS resources
KMS	Encryption key management
Secrets Manager	API keys and credentials storage
WAF	Web Application Firewall protection

Messaging & Events

Service	RADIANT Usage
EventBridge	Event-driven architecture triggers
Kinesis	Real-time streaming data processing
SNS	Push notifications and alerts
SQS	Message queues for async processing

Monitoring & Operations

Service	RADIANT Usage
CloudWatch	Logs, metrics, dashboards, alarms
X-Ray	Distributed tracing
CloudTrail	API audit logging
Cost Explorer	Cost monitoring and optimization

AI/ML Services

Service	RADIANT Usage
Bedrock	Foundation model access (Claude, Titan)
Textract	Document text extraction
Comprehend	NLP for language detection
Transcribe	Speech-to-text for voice input

5. Acronyms & Abbreviations

General

Acronym	Full Form
A2A	Agent-to-Agent (Google protocol for AI agent communication)
AGI	Artificial General Intelligence
API	Application Programming Interface
AWS	Amazon Web Services

Acronym	Full Form
CDK	Cloud Development Kit (AWS infrastructure-as-code)
CDN	Content Delivery Network
CLI	Command Line Interface
CRDT	Conflict-free Replicated Data Type (for real-time collab)
CRUD	Create, Read, Update, Delete
DNS	Domain Name System
ECS	Elastic Container Service
FTS	Full-Text Search
GUI	Graphical User Interface
HTTP	Hypertext Transfer Protocol
IDE	Integrated Development Environment
JSON	JavaScript Object Notation
JWT	JSON Web Token
MCP	Model Context Protocol (Anthropic's tool protocol)
MFA	Multi-Factor Authentication
ORM	Object-Relational Mapping
REST	Representational State Transfer
SDK	Software Development Kit
SQL	Structured Query Language
SSE	Server-Sent Events (streaming)
SSL/TLS	Secure Sockets Layer / Transport Layer Security
UI	User Interface
URL	Uniform Resource Locator
UUID	Universally Unique Identifier
VPC	Virtual Private Cloud
WebSocket	Full-duplex communication protocol
YAML	YAML Ain't Markup Language

RADIANT-Specific

Acronym	Full Form
CBF	Control Barrier Function (safety guardrails)
CP1-CP5	Checkpoint gates 1-5 (HITL approval points)
DIA	Decision Intelligence Artifacts
ECD	Entity-Context Divergence (verification scoring)
HITL	Human-in-the-Loop
OODA	Observe-Orient-Decide-Act (agent loop)
RADIANT	Rapid AI Deployment Infrastructure for Applications with Native Tenancy
RAWS	RADIANT Adaptive Weighted Scoring
RLS	Row-Level Security (PostgreSQL tenant isolation)
SOFAI	System 1/System 2 routing framework
SSF	Shared Signals Framework (identity federation)
UDS	User Data Service

Acronym	Full Form
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Compliance

Acronym	Full Form
CCPA	California Consumer Privacy Act
COPPA	Children's Online Privacy Protection Act
DSAR	Data Subject Access Request
FDA 21 CFR Part 11	FDA regulation for electronic records
GDPR	General Data Protection Regulation (EU)
HIPAA	Health Insurance Portability and Accountability Act
PHI	Protected Health Information
PII	Personally Identifiable Information
SOC 2	Service Organization Control Type 2
TOTP	Time-based One-Time Password (MFA)

AI Models & Providers

Acronym	Full Form
GPT	Generative Pre-trained Transformer (OpenAI)
LLaMA	Large Language Model Meta AI
Mixtral	Mistral AI's mixture-of-experts model
o1/o3	OpenAI reasoning models
Qwen	Alibaba's LLM family

6. Database & Storage Terms

Term	Definition
Aurora	AWS managed PostgreSQL/MySQL service
Cold Tier	Long-term storage (S3 Iceberg, 90d-7y retention)
Connection Pooling	Reusing database connections for efficiency
Hot Tier	Fast access layer (ElastiCache + DynamoDB, 0-24h)
Materialized View	Pre-computed query results for dashboard metrics
Migration	Versioned database schema change
Partitioning	Splitting tables by time/tenant for performance
pgvector	PostgreSQL extension for vector similarity search
RDS Proxy	Connection pooling for Lambda
Warm Tier	Active storage (Aurora PostgreSQL, 1-90 days)
Zero-Copy Mount	Access external data without duplication

7. Security & Compliance Terms

Term	Definition
AES-256-GCM	Encryption standard used for data at rest
Audit Trail	Immutable log of all system actions
Break Glass	Emergency admin access with full logging
Data Sovereignty	Per-tenant data region configuration
Erasure Request	GDPR right-to-be-forgotten compliance
Legal Hold	Prevent data deletion for litigation
Merkle Chain	Tamper-evident audit log using hash chains
RBAC	Role-Based Access Control
Row-Level Security	PostgreSQL tenant isolation mechanism
Tenant Isolation	Complete separation of customer data

8. API & Protocol Terms

Term	Definition
A2A Protocol	Google's Agent-to-Agent communication standard
CAEP	Continuous Access Evaluation Profile
Envelope	CatoMethodEnvelope - wrapper for all pipeline outputs
GraphQL	Query language for flexible API access
LiteLLM	Unified gateway for 100+ AI model APIs
MCP	Model Context Protocol - Anthropic's tool invocation standard
OAuth 2.0	Authorization framework for third-party access
OpenAPI	REST API specification standard
SSE	Server-Sent Events for streaming responses
WebSocket	Bidirectional real-time communication
Yjs	CRDT library for real-time collaboration

9. UI/UX Terms

Term	Definition
Apple Glass	RADIANT's design system based on macOS aesthetics
Breathing Scrollbar	Heatmap visualization showing trust topology
Gearbox	Polymorphic UI's elastic compute indicator
GenUI	Generative UI - AI-created interactive components
Liquid Interface	Morphable UI system that adapts to context
Presence Indicator	Shows who's in a collaborative session
Shadcn/ui	Component library used for admin dashboards
Tailwind CSS	Utility-first CSS framework
Toast	Temporary notification message

Term	Definition
Zustand	State management library for React

Quick Reference: CDK Stacks

Stack	Purpose
admin-stack	Admin API handlers
ai-stack	AI model configuration
api-stack	Main API Gateway + Lambda
auth-stack	Cognito authentication
batch-stack	AWS Batch jobs
brain-stack	AGI Brain services
cato-genesis-stack	Cato boot sequence
cato-redis-stack	Cato caching layer
cato-tier-transition-stack	Memory tier management
cognition-stack	Cognitive services
collaboration-stack	Real-time collaboration
consciousness-stack	Consciousness loop services
data-stack	Database and storage
dia-stack	Decision Intelligence Artifacts
formal-reasoning-stack	Logic and reasoning services
gateway-stack	API Gateway configuration
grimoire-stack	Procedural memory
library-execution-stack	External library execution
library-registry-stack	Library management
litellm-gateway-stack	LiteLLM proxy
mission-control-stack	HITL approval UI
monitoring-stack	CloudWatch dashboards
multi-region-stack	Multi-region deployment
networking-stack	VPC and networking
scheduled-tasks-stack	Cron jobs and schedulers
security-monitoring-stack	Security alerts
security-stack	WAF and security
sovereign-mesh-stack	Distributed execution
storage-stack	S3 buckets
thinktank-admin-api-stack	Think Tank admin API
thinktank-auth-stack	Think Tank auth
tms-stack	Time Machine services
user-registry-stack	User management
webhooks-stack	Webhook handlers

Quick Reference: AI Providers

Provider	Models	Type
Anthropic	Claude 3.5, Claude 3 Opus/Sonnet/Haiku	External
OpenAI	GPT-4o, GPT-4 Turbo, o1, o3	External
Google	Gemini 2.0, Gemini Pro	External
xAI	Grok-2	External
DeepSeek	DeepSeek V3, DeepSeek R1	External
Meta	LLaMA 3.2	Self-hosted
Mistral	Mixtral 8x7B, Mistral Large	External + Self-hosted
Alibaba	Qwen 2.5	Self-hosted
AWS	Titan, Claude via Bedrock	External

Quick Reference: Governance Presets

Preset	Auto-Execute Threshold	Veto Threshold	Use Case
COWBOY	0.7	0.95	Maximum autonomy
BALANCED	0.5	0.85	Standard operations
PARANOID	0.2	0.6	High-stakes/regulated

Document History

Version	Date	Changes
1.0.0	Jan 29, 2026	Initial comprehensive glossary

This document serves as a quick reference cheat sheet for the RADIANT platform. For detailed documentation, see the specific admin guides and engineering documentation.