Future DMSC Works
（compared with the industry practices）

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On behalf of all proponents of dmsc
(experts from Huawei/Alibaba/BUPT/IBM/CAS/ANP/ZTE/Asia Info/Tsinghua/China Telecom… …)
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Industry Practices (Cisco Agency)

Agent Directory Service

- **Capability-based**: OASF taxonomies
- Federated Registry: **Decentralized registry** without a single central registry
- **Cross-protocol/registry/framework interoperability**

SLIM

- Transport for Agent Protocols: A2A, MCP, OpenTelemetry, and custom agent protocols
- End-to-End Encryption: Message Layer Security (MLS)
- Network-Topology Independence

Observability

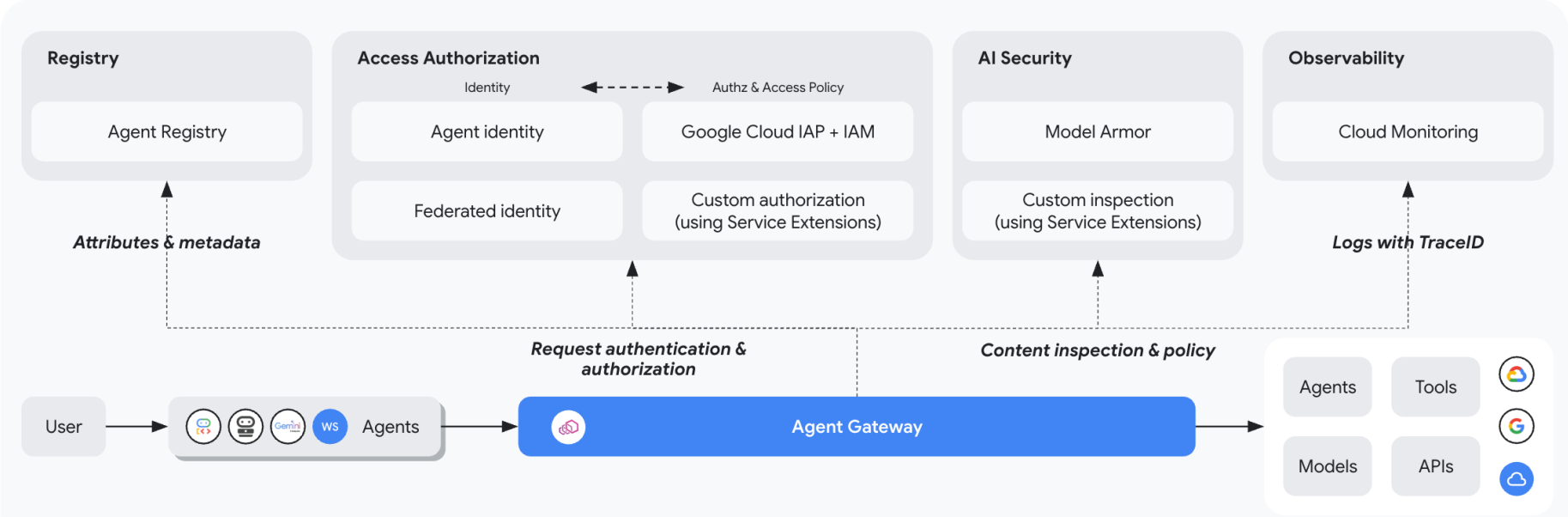
- End-to-end telemetry & multi-agent evaluation

Identity

- Agent identity& authentication & trust

https://agntcy.org/

Industry Practices (Google's efforts)



•**Centralized governance for all agent interactions:** Configure and enforce consistent access policies across diverse agent runtimes and deployment models, ensuring enforcement of least-privilege permissions for agents at runtime.
•**AI security guardrails:** Protect against novel risks like Model Context Protocol (MCP) prompt injection attacks using integrated services like Model Armor.
•**Comprehensive observability:** Gain deep visibility into agentic interactions through Cloud Logging and Cloud Trace, facilitating security investigations and performance monitoring.

https://docs.cloud.google.com/gemini-enterprise-agent-platform/govern/gateways/agent-gateway-overview

Alignment with DMSC Vision

→ Several architectural principles emerging from ADS are conceptually aligned with DMSC's gateway-oriented vision.

Agent Advertisement

Industry:

- Federated architecture
- Cross-registry lookup

DMSC:

- Gateway-assisted advertisement
- Cross-domain agent reachability

Agent Communication

Industry:

- Standardized interaction

DMSC:

- Gateway-mediated protocol interoperability

Trust & Identity

Industry:

- Identity verification
- Trust establishment

DMSC:

- Secure gateway authentication
- Policy enforcement

Observability

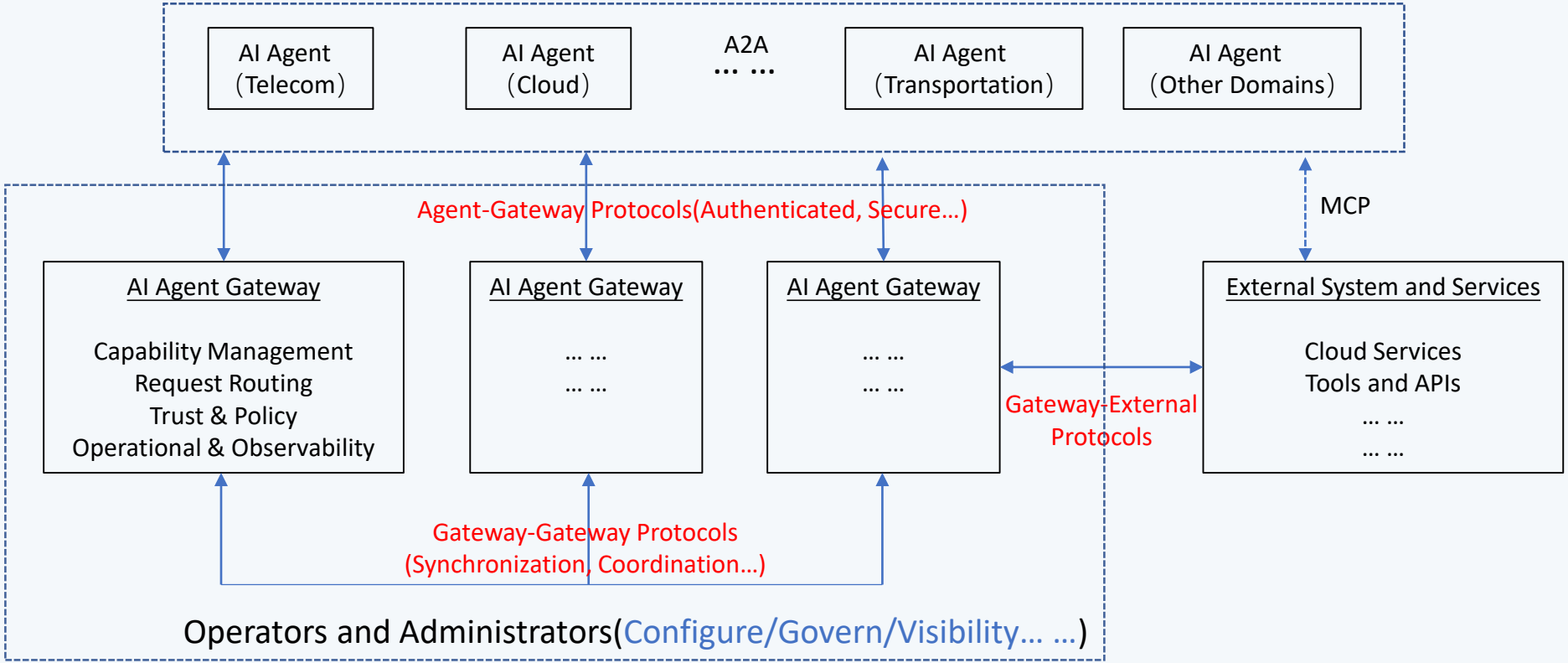
Industry:

- Telemetry collection

DMSC:

- Gateway visibility
- End-to-end interaction monitoring

The Aim of DMSC Efforts



The protocol between agents and agent gateway

- **Agent Interconnection based on intents**
  - The gateway receive the intent of the sender agent, and route to the suitable partner agents
  - Intent requests with objectives, constraints, sender identity, and correlation fields

- **Standardization of Gateway Operations**
  - Capability descriptions and agent states are obtained, synchronized, filtered, and locally used
  - Establish the rules to support agent discovery, access control, selection and filtering, secure transmission, and interoperable collaboration

Intent-based Interconnection Protocol: realize secure, consistent and interoperable interconnection based on semantic intent and capability status of agents.

https://datatracker.ietf.org/doc/draft-sz-dmsc-iaip/

Inspirations for Future DMSC Protocol Extensions

Principles in Existing Agent Ecosystems

Potential AI Agent Gateway Extensions

Capability-centric

Capability becomes the routing primitive rather than endpoint name.

→

Capability-oriented Advertisement

- Capability Advertisement Protocol\ Description Model

Federated

One federated registry for cross-protocol/registry/framework agents

→

Cross-domain Agent Interoperability

- Registry Interworking\ Policy Exchange\ Gateway Federation Protocol

Heterogeneous Interoperability

Common abstractions enable heterogeneous agent ecosystems.

→

Cross-ecosystem Interoperability

- Protocol Interworking\ Identity & Trust Exchange\ Interaction telemetry

……

Why AI Agent Gateway Matters

Existing Industry ecosystems are independently converging toward similar architectural building blocks.

- ✓ AI Agent Gateway provides a natural interoperability point between heterogeneous agent ecosystems.
- ✓ DMSC may standardize gateway around protocols instead of redefining agent frameworks.
- ✓ Future protocol extensions may focus on onboarding, GW synchronize, trust and observability /operational manageability etc.

→ DMSC provides an opportunity to standardize gateway around protocols that enable interoperability across heterogeneous agent ecosystems.

AI Agent Gateway and its surrounding standard protocols are the **first step** to build the capability-based Internet of Agents.