Agent Communications
Gap Analysis and Way Forward

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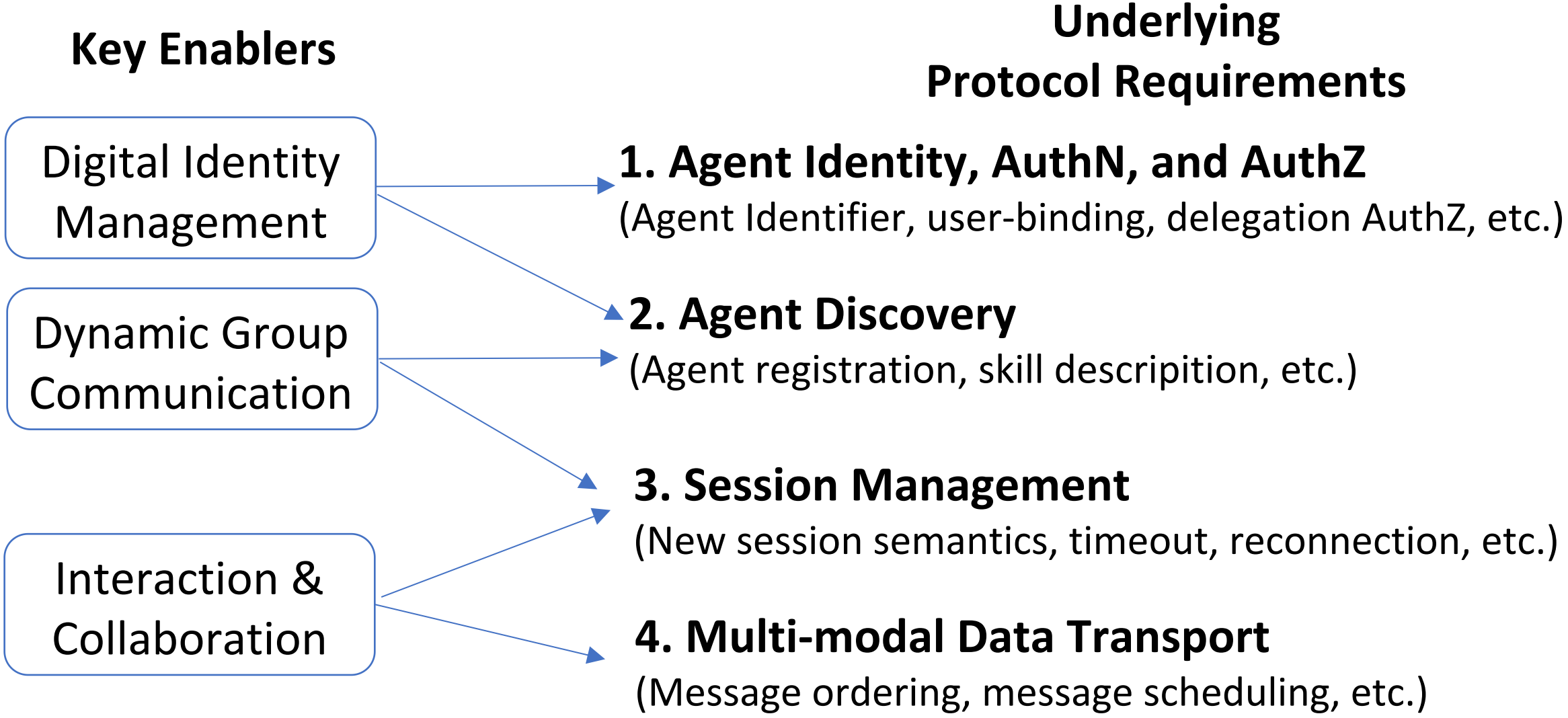
Purpose

- Derive **protocol requirements** by doing **gap analysis** for AI protocol(s) for cross-domain agent deployments for the Internet of Agents.
- Incorporate mobile networks dynamics and architecture requirements into protocol design considerations
  - **Cross-domain interaction**, network diversity, AI workload/collaboration, interoperability
  - Key agentic use cases in the following areas: Embodied AI collaboration, Massive IoT, Autonomous vehicles, QoS, etc.

Outcomes

- Achieve consensus on AI protocol needs within IETF.
- Establish Working Streams:
  - Prioritize Urgent Tasks: Focus on the most critical workstreams first.
  - Enable Parallel Progress: Advance multiple key areas simultaneously.
- Foster Early Synchronization: Align efforts (technical directions) early with IETF and 3GPP.

Technical summary overview



IETF work analysis

1. Agent Identity, AuthN, and AuthZ

- **WIMSE/OAUTH Applicability**

(SEC, ART)

2. Agent Discovery

- **Intra-domain**(covered by open source protocol)
- **Inter-domain**(DNSOP, INTAREA)

(OPS, INT, ART)

3. Session Management

4. Multi-modal Data Transport

- **AIProto Strawman Charter -> Possibly New WG**

(Deliverables should care more about cross-domain interactions and interoperable features, like: **UCs, Framework, Common Abstractions**, etc)

- **Current WGs: MoQ/webtransport/MASQUE/…**

(WIT, ART)

Work to date and future plans

- Side meetings happened in IETF123 and IETF124, Demos in IETF 125
  - Past side meetings materials:
    - https://github.com/PL-IETF/AI-Agent-Communication-Networking
- IETF work space analysis draft:
  - https://datatracker.ietf.org/doc/draft-yao-catalist-problem-space-analysis/

  (Special thanks to Zahed, who is also a co-author now.)
- More on 6G relevance:
  - Use cases and Requirements, https://datatracker.ietf.org/doc/draft-stephan-ai-agent-6g/
  - Framework, https://datatracker.ietf.org/doc/draft-zyyhl-agent-networks-framework/
- The discussions happen in agent2agent@ietf.org, the same as CATALIST
- There will be another side meeting just after the CATALIST BoF meeting:
  - March 18, 11:15-12:45 (Asia/Shanghai) · Hunan, more discussions on technical details of the gap analysis draft above
- Frame IETF's problem space better, gather more proponents, charter revision, formulate protocol design team?