

October 26, 2025 | Bologna

W3C WebAgents Community Group

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W3C WebAgents Community Group

Goals

This CG aims to investigate the design of a new class of Web-based Multi-Agent Systems (MAS) that:

- inherit the beneficial architectural properties of the Web (Internet-scalability, evolvability, simplicity, etc.),
- preserve the beneficial properties of MAS (adaptability, openness, robustness, etc.), and
- are human-centric (support transparency, usability, accountability, etc.).

We are especially interested in the use of Linked Data and Semantic Web standards for weaving a hypermedia fabric that mediates uniform interaction among heterogeneous entities: people, artificial agents, (low-power) devices, digital services, knowledge repositories, etc. — for this reason, we refer to this new class of Web-based MAS as Hypermedia MAS. This community group brings together experts actively contributing to advances in autonomous agents and MAS, the Web Architecture and the Web of Things, Semantic Web and Linked Data, and Web standards in general — as well as any other areas that could contribute to this approach for distributed intelligence on the Web.

W3C WebAgents Community Group

Scope of Work

To achieve its goals, the WebAgents CG pursues the following activities:

- Organizing events such as hackathons, plugfests, workshops, etc.
- Writing Community Group Reports on the findings of the CG.
- Curating online materials to help promote the work of the CG and to support experimenting with Hypermedia MAS.
- Creating liaisons with other groups at the W3C (Cor Groups) that are relevant to the topics explored in
- · Creating liaisons with the research community and

Out of Scope

Under this initial charter, the work of the WebAgents CG is in an exploratory phase — and the scope of the relevant topics also needs to reflect the interests of CG members.

The WebAgents CG aims to maintain its complementarity with other CGs. For instance, while many of the topics related to the overall objective of this CG draw from (Decentralized) Al research, its main focus is primarily on architectures for and the engineering of Hypermedia MAS. Other W3C groups might be better suited for other Al-related topics (e.g., see the Cognitive Al CG, the Al Knowledge Representation CG, or the Human-Centric Al CG). The WebAgents CG provides a unique forum for everyone interested to integrate these aspects for exploring and designing large-scale, open, long-lived, and decentralized Web-based systems of people and intelligent (artificial) agents.

Hybrid Meeting, Oct. 25



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WebAgents Community Group Report on Interoperability for Agents on the Web

Draft Community Group Report 25 October 2025

Latest published version:

none

Latest editor's draft:

https://w3c-cg.github.io/webagents/TaskForces/Interoperability/Reports/report-interoperability.html

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Your Name

Feedback:

GitHub w3c-cg/webagents (pull requests, new is

Copyright © 2025 the Contributors to the WebAgents Community published by the Autonomous Agents on the Web Community Grohuman-readable summary is available.

Abstract

Advances in large language models (LLMs) that can autonomous agents and multi-agent systems. Like p designed for specific tasks, highlighting the need for



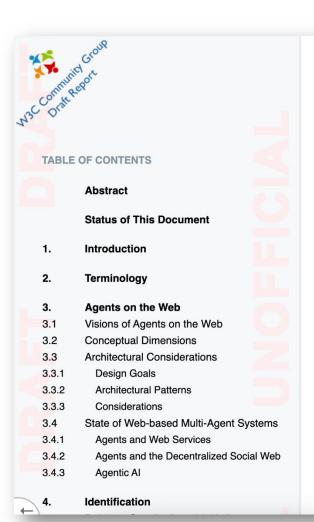
https://bit.ly/hyperagents2025-webagents-report

What should be the **role of the Web** in the emerging landscape of Agentic AI?

What are the **relevant standards** within and maybe also outside the W3C?

What are the **standardization gaps** (if any)?

Hybrid Meeting, Oct. 25



WebAgents Community Group Report on Interoperability for Agents on the Web



Draft Community Group Report 25 October 2025		Relevant Concepts	Agent Interaction	Tool Use	Identifiers	Descriptions	Discovery Mechanisms	Arch. Style
Latest published version: none Latest editor's draft: https://w3c-cg.github.io/webagents/TaskForces/Interoperability/Reports/report-intero Editors: Andrei Ciortea (5) (Inria and University of St.Gallen) Rem Collier (5) (University College Dublin)	МСР	Tool, Resource, Prompt	N/A	Function calling	Strings (Tools and Prompts), URIs (Resources)	Tool definition, Resource descriptions, Prompt definitions, (JSON)	Directories (via */list)	Client-Server with streaming RPC connectors (JSON-RPC 2.0, HTTP+SSE)
Authors: Jérémy Lemée (Diversity of St. Gallen) Your Name Feedback: GitHub w3c-cg/webagents (pull requests, new issue, open issues) Copyright © 2025 the Contributors to the WebAgents Community Group Report on Interoperability for Agent published by the Autonomous Agents on the Web Community Group under the W3C Community Contributo human-readable summary is available.	A2A	Agent Card, Task	Task invocation	N/A	Strings?	Agent Card, Task description, (JSON)	Well-known URIs, Directories	Async. Client-Server with streaming RPC connectors and webhooks (JSON-RPC 2.0, HTTP+SSE)
Abstract	ANP	Agent, Agent Description, Communication Protocol	Communication protocols with protocol negotiation	N/A	W3C DID with custom Web-based Agent DID Method	Agent Description (RDF/JSON-LD)	Directories	Peer-to- Peer? (WebSocket subprotocol)
Advances in large language models (LLMs) that can follow instructions and use tools hat autonomous agents and multi-agent systems. Like previous generations of agents, LLM designed for specific tasks, highlighting the need for open networks of agents that comp	LMOS	Agent, Agent Group, Tool, Agent Description, Tool Description	Message passing? (in principle: TD interaction affordances)	Property Affordances, Event Affordances, Action Affordances (W3C WoT TD)	Uniform identifiers (IRIs, W3C DIDs)	Agent Description, Tool Description (W3C WoT TD; JSON, RDF/JSON- LD)	DNS- SD/mDNS, Well-known URIs, Directories (W3C WoT Discovery)	W3C WoT Arch.? with protocol bindings for HTTP and WebSocket subprotocol

Hybrid Meeting: Architectural Patterns

CET	Agenda			
14:00 - 14:15	Welcome & Agenda Setting			
14:15 - 15:30	Focused Discussion			
15:30 - 16:00	Coffee Break			
16:00 - 17:00	Demo / Hands-on session			
17:00 - 17:30	Wrap-up and Next Steps			

What **goals should guide** the design of Web-based Multi-Agent Systems (MAS)?

How can the Web contribute to those design goals?

What is a **minimal set of architectural patterns** for Web-based MAS?

What **architectural constraints** do we need in order to fully leverage the Web?

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https://www.w3.org/community/webagents/

Any Questions / Comments / Doubts / Concerns?



Images

https://freepik.com