

# P2302

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**Submitter Email:** [s.diamond@ieee.org](mailto:s.diamond@ieee.org)

**Type of Project:** New IEEE Standard

**PAR Request Date:** 24-Mar-2017

**PAR Approval Date:** 18-May-2017

**PAR Expiration Date:** 31-Dec-2021

**Status:** PAR for a New IEEE Standard

**Project Record:** P2302

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**1.1 Project Number:** P2302

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Intercloud Interoperability and Federation (SIIF)

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**3.1 Working Group:** Intercloud WG (ICWG) Working Group (C/CCSC/ICWG/2302\_WG)

**Contact Information for Working Group Chair**

**Name:** Robert Bohn

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**Phone:** +1-301-975-4731

**Contact Information for Working Group Vice-Chair**

**Name:** David Bernstein

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**3.2 Sponsoring Society and Committee:** IEEE Computer Society/Cloud Computing Standards Committee (C/CCSC)

**Contact Information for Sponsor Chair**

**Name:** Stephen Diamond

**Email Address:** [s.diamond@ieee.org](mailto:s.diamond@ieee.org)

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**Contact Information for Standards Representative**

None

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**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 04/2021

**4.3 Projected Completion Date for Submittal to RevCom**

**Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2021**

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 25

**5.2 Scope:** This standard defines topology, functions, and governance for cloud-to-cloud interoperability and federation. Topological elements include clouds, roots, exchanges (which mediate governance between clouds), and gateways (which mediate data exchange between clouds). Functional elements include name spaces, presence, messaging, resource ontologies (including standardized units of measurement), and trust infrastructure. Governance elements include registration, geo-independence, trust anchor, and potentially compliance and audit. The standard does not address intra-cloud (within cloud) operation, as this is cloud implementation-specific, nor does it address proprietary hybrid-cloud implementations.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** This standard creates an economy amongst cloud providers that is transparent to users and applications, which provides for a dynamic infrastructure that can support evolving business models. In addition to the technical issues, appropriate infrastructure for economic audit and settlement must exist.

**5.5 Need for the Project:** The cloud landscape today consists of multiple independent and incompatible cloud offerings, based on both proprietary and open architectures. The growth of the Internet was facilitated by the creation of an interoperable service marketplace between Internet service consumers and Internet service providers. Clouds today do not interoperate, resulting in absolute limitations in geographical coverage, resource functionality, and resource scalability. A cloud provider may not have resources where a cloud consumer needs them; a cloud provider may not offer the type of resource needed; and a cloud provider's resources cannot be infinitely elastic. Intercloud interoperability and federation solve all these problems. This is analogous to the interconnected economy that evolved amongst telephony

service providers. This facilitated the original global long distance network for voice, and more recently today's cellular world where one provider's customers can "roam" on another provider's network.

**5.6 Stakeholders for the Standard:** \*Cloud consumers

- \*Cloud service providers
- \*Cloud equipment manufacturers
- \*Cloud software developers
- \*Cloud exchange operators
- \*Cloud registration authorities
- \*Governments

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**Intellectual Property**

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** Yes

**If yes please explain:** This standard may require the assignment of unique identifiers to Intercloud topology element, similar to the MAC address assignments used in Ethernet cards.

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**7.1 Are there other standards or projects with a similar scope?:** Yes

**If Yes please explain:** Together with SA staff, we have agreed to a "restart" plan that will entail close collaboration with NIST for P2302. The close collaboration will inject new energy into P2302 by adding new resources in collaboration with a NIST Public Working Group on Federated Cloud (PWGFC). Please see item 8.1 for further details.

**and answer the following**

**Sponsor Organization:** NIST Public Working Group on Federated Cloud (PWGFC)

**Project/Standard Number:**

**Project/Standard Date:**

**Project/Standard Title:**

**7.2 Joint Development**

**Is it the intent to develop this document jointly with another organization?:** No

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**8.1 Additional Explanatory Notes:** IEEE P2302 and NIST PWGFC will closely coordinate their activities and will host either co-located or successive meetings allowing for many of the same participants to participate in both activities. The P2302 WG and the NIST PWGFC will create mirror structures of one another in order to ensure close coordination and streamlined effort. Both groups will be open to any materially affected party, although IEEE utilizes voting rights on a per-meeting basis to establish quorum and decision-making. In order to keep the vectors aligned, the leadership of the P2302 working group will be by Robert Bohn from NIST, and the leadership of the NIST PWGFC will be by John Messina from NIST. Additional P2302 WG and PWGFC leadership will be solicited from the user community.