

Named Data Networking Consortium

Advanced Network Technologies Division, Information Technology Laboratory
National Institute of Standards and Technology (NIST)

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Internet technologies serve as critical infrastructure across all sectors of industry and society. They power both the public Internet and private networks that range in scale from hyperlocal body area communication to the global reach of satellite deployments. Internet technologies work by defining modern and streamlined approaches to content distribution and data exchange, automation, machine learning, human communication and creative expression, and many other domains that include key emerging markets such as mHealth and V2X communications. Next-generation networking will enable fundamental advances across all of them. The future of networking is closely connected to the future of society, and society wants the Internet to provide online content and digital communications that are secure, efficient, inexpensive, and most importantly, simple to use and working every time.

As part of its effort to inform the future of networking and improve efficiency, reliability, security, and robustness of networks, the NIST Information Technology Laboratory's (ITL) Advanced Network Technologies Division (ANTD) took over management of the Named Data Networking (NDN) Consortium from the academic research team in 2020. The NDN Consortium brings together industry, government, non-profit, and academic members to drive the development and adoption of NDN and related technologies into real-world applications.

NDN is an open network architecture for secure, data-centric communications developed over 10 years of research initiated by the National Science Foundation's Future Internet Architecture program in 2010 and deepened by the efforts of the global information-centric networking research community, industry partners, and other government programs. NDN can provide networking that is more intrinsically secure, disruption-tolerant, and mobile-friendly, building on over 40 years of experience with IP in the wild and research on applications from real-time media to scientific big data and tactical networking.

The NIST NDN Consortium expands on a previous industry consortium organized by UCLA. It promotes an open source ecosystem of research and experimentation around NDN and acts as a clearinghouse for sharing public research results among industry, universities and non-profits, and U.S. government agencies. It also acts as an umbrella for research, pilot testing, and other activities independent of individually sponsored research projects and aims to advance the standardization of the NDN architecture.

NIST believes NDN is relevant to all industries and especially encourages content producers, users of big data, and the IoT / M2M to participate in the Consortium. Members do not need to be working with NDN already. They may aim to 1) support and/or participate in research, technology transfer, and standardization efforts that bring NDN, along with its core ideas, concepts, and realizations, into real-world applications in industry and government; and/or 2) follow progress in the field and explore its implications for their industry through interaction with experts within the Consortium member organizations.

Specific benefits to members of the Consortium include: 1) Coordinated access to university, government, and industry experts as well as students working in the field and their public research efforts and ecosystem of activities; 2) Support and steering of annual community meetings, conferences, and technical panels; 3) Engagement with standardization efforts by NIST and the Consortium.

To participate, members enter into a standard Cooperative Research and Development Agreement (CRADA) with NIST and contribute a blend (at NIST's discretion) of financial and in-kind contributions totaling \$25,000, for organizations with gross annual revenue of \$1B or more, or \$10,000, for those with revenue less than \$1B. *A one-time 50% reduction of fee remittance is allowed in the pilot fiscal year, 2020-2021.*

In-kind participation is encouraged. For industry and government members, in-kind contributions might include providing NDN-related internships, supporting academic members with technical consulting, hosting events, contributing to standards efforts, and providing tech transfer / business unit use cases. For universities, example in-kind contributions might include promoting NDN research by faculty and students, hosting of technical panels and meetings for broad audiences, and contributions to standards and interoperability efforts.

To join the NIST NDN Consortium or for more information, contact the management team:

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For more information on NDN, including technical papers and other materials, please visit <http://named-data.net>.