



OpenFog Consortium

Glossary of terms related to Fog Computing

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Glossary of Industry Terms for Fog Computing

Term	Definition	Source
Access Control	Means to ensure that access to assets is authorized and restricted based on business and security requirements. <i>Note: Access control requires both authentication and authorization.</i>	International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) 27000:2014
Actuator	A device for moving or controlling a mechanism or system. It takes energy, usually transported by air, electric current, or liquid, and converts that into some kind of motion or other physical aspect of a system. In fog environments, the actuator is a mechanical device that is controlled by a fog node.	Sclater 2007 / OpenFog Consortium
Address	An address is used for locating and accessing – “talking to” – a Device, a Resource, or a Service. In some cases, the ID and the Address can be the same, but conceptually they are different.	IoT-A Architectural Reference Model (IOT-A) by the IoT European Research Cluster
Analytics	Synthesis of knowledge from information.	NIST Interagency Publication 8401-1
Appliance	A computer appliance is generally a separate and discrete hardware device with integrated software, specifically designed to provide a specific computing resource.	Wikipedia
Application	A software program running on fog infrastructure designed to support a specific function or business need. Fog use cases may support one or more applications	OpenFog Consortium
Application Software	Software that provides an application service to the user. It is specific to an application in the multimedia and/or hypermedia domain and is composed of programs and data.	European Telecommunications Standards Institute (ETSI) - ETR173
Architecture	The fundamental organization of a system embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution.	Institute of Electrical & Electronics Engineers (IEEE) 1471-2000
Architecture Description	Work product used to express architecture.	ISO/IEC 42010:2011

Architecture Framework	Conventions, principles and practices for the description of architectures established within a specific domain of application and/or community of stakeholders	ISO/IEC 42010:2011
Architecture Vision	A high-level, aspirational view of the target architecture.	The Open Group Architecture Framework (TOGAF9)
Artificial Intelligence (AI)	A technology that appears to emulate human performance typically by learning, coming to its own conclusions, appearing to understand complex content, engaging in natural dialogs with people, enhancing human cognitive performance or replacing people on execution of nonroutine tasks.	Gartner
Aspiration	Stakeholder Aspirations are statements that express the expectations and desires of the various stakeholders for the services that the final [system] implementation will provide.	E-FRAME
Authentication	Authentication is the process of verifying a user's true identity. This may involve the use of one or more means of proof of identification, also known as factors, such as PIN codes and smart cards.	Nexus IoT Glossary
Authorization	Granting of rights, which includes the granting of access based on access rights.	ISO 7498-2:1989
Autonomous operation	When a system in its operational state, automatically executes its preprogrammed task or set of tasks without human assistance.	OpenFog Consortium
Autonomy	The ability of an intelligent system to independently compose and select among different courses of action to accomplish goals based on its knowledge and understanding of the world, itself, and the situation.	Institute for Human & Machine Cognition (IHMC)
Availability	Assurance that the systems responsible for delivering, storing and processing information are accessible when needed, by those who need them.	ISO-27001
Boxology	An informal term OpenFog uses to refer to architectural block diagrams, the elements shown on them, and the interfaces between these elements.	OpenFog Consortium
Brownfield	A network deployment that is constrained by existing solutions or elements, and must coexist and interoperate with them. Contrasts with greenfield	OpenFog Consortium
Business Logic	Goal or behavior of a system involving Things serving a particular business purpose. Business Logic can define the behavior of a single Thing, a group of Things, or a complete business process.	IOT-A
Capacity	The total available amount of a resource, such as link bandwidth, processor cycles, or storage size	OpenFog Consortium

Choreography	Type of composition whose elements interact in a non-directed fashion with each autonomy part knowing and following an observable predefined pattern of behavior for the entire (global) composition.	ISO/IEC DIS 18834-1
Collaboration	Type of composition whose elements interact in a non-directed fashion, each according to their own plans and purposes without a predefined pattern of behaviour	ISO/IEC DIS 18834-1
Composability	Capability of a component to interact with other components in recombinant fashion to satisfy requirements based on the expectation of the behaviors of the interacting parties.	Industrial Internet Consortium
Confidentiality	Property that information is not made available or disclosed to unauthorized individuals, entity, or processes	ISO/IEC 27000:2014
Cloud	Or, "The Cloud," is generally used as shorthand for cloud computing. The name "cloud" comes from the fluffy cloud typically used in Visio-style network diagrams to represent a connection to the Internet.	IoT Guide
Cloud Computing	A general term for the delivery of various hosted services over the Internet. The "as-a-Service" moniker is used for cloud services such as Software-as-a-Service, Platform-as-a-Service and Infrastructure-as-a-Service. The back-end for many IoT devices may be delivered via the Cloud. Fog computing works with the cloud to optimize selected functions that require processing closer to devices, making the cloud more efficient and secure.	IoT Guide / OpenFog Consortium
Communication Model	The communication model aims at defining the main communication paradigms for connecting elements. This model provides a set of communication rules to build interoperable stacks, together with insights about the main interactions among the elements of the domain model.	IOT-A
Composition	Result of assembling a collection of elements for a particular purpose	ISO/IEC DIS 18834-1
Confidentiality	Assurance that information is shared only among authorized persons or organizations. Breaches of confidentiality can occur when data is not handled in a manner appropriate to safeguard the confidentiality of the information concerned. Such disclosure can take place by word of mouth, by printing, copying, e-mailing or creating documents and other data etc.	ISO-27001
Constrained Network	A constrained network is a network of devices with restricted capabilities regarding storage, computing power, and / or transfer rate.	IOT-A

Controller	Anything that has the capability to affect a Physical Entity, like changing its state or moving it.	IOT-A
Credentials	A credential is a record that contains the authentication information (credentials) required to connect to a resource. Most credentials contain a user name and password.	IOT-A
Cryptography	Discipline that embodies principles, means, and mechanisms for the transformation of data in order to hide its information content, prevent its undetected modification and/or prevent its unauthorized use	ISO/IEC 18014-2:2009
Databus	Data-centric information sharing technology that implements a virtual, global data space, where applications read and update data via a publish-subscribe and other communications mechanism.	Industrial Internet Consortium
Data-centricity	An architecture formed from participants that communicate only with the data infrastructure; scalable, real-time, dependable, high-performance and interoperable data exchanges between publishers and subscribers.	Object Management Group
Decentralized	A computing system where resources like computation, networking, storage, acceleration and control are distributed across a number of geographically separated nodes. This approach can provide advantages in latency, security, performance, scalability and network resiliency.	OpenFog Consortium
Device	Physical entity embedded inside, or attached to, another physical entity in its vicinity, with capabilities to convey digital information from or to that physical entity	Industrial Internet Consortium
Device Endpoint	Endpoint that enables access to a device and thus to the related physical entity.	Industrial Internet Consortium
Digital Entity	Any computational or data element of an IT-based system.	IOT-A
Digital Twin	A digital twin is a digital replica of physical assets, processes and systems that provides both the elements and the dynamics of how an IoT device operates throughout its life cycle.	Wikipedia
DIKW	D ata gathered becomes I nformation when stored and retrievable becomes K nowledge. Knowledge enables W isdom for autonomous IoT.	OpenFog Consortium
Discovery	Discovery is a service to find unknown resources/entities/services based on a rough specification of the desired result. It may be utilized by a human or another service. Credentials for authorization are considered when executing the discovery.	IOT-A
Edge Gateway	Endpoint that provides an entry point into enterprise or service provider core networks	Industrial Internet Consortium

Edge Analytics	Edge analytics is any type of data- and metadata-related quantitative exploration, executed locally at the edge. Edge analytics often include limited anomaly detection or other basic security-related analytic services, though more complete analytic implementations are also possible.	MachNation
Edge Computing	This concept places applications, data and processing at the logical extremes of a network rather than centralizing them. Placing data and data-intensive applications at the Edge reduces the volume and distance that data must be moved. Fog computing is a superset of edge computing.	IoT Guide / OpenFog Consortium
Element	Unit that is indivisible at a given level of abstraction and has a clearly defined boundary Note: An element can be any type of entity	ISO/IEC DIS 18834-1
Endpoint	A component that communicates back and forth across the network. Endpoints are topologically deep in the IoT network and far from the cloud.	OpenFog Consortium
Enterprise	Segment of computing mostly focused at traditional IT and Industrial IT.	OpenFog Consortium
Entity	Something that exists as itself, as a subject or as an object, actually or potentially, concretely or abstractly, physically or not. [Note: fog computing always refers to physical entities]	Wikipedia
Extreme Edge	Farthest connected points of the network, closest points to where operational data is generated (i.e. closest to the devices or "things")	OpenFog Consortium
5G	The fifth generation, newest mobile wireless standard based on the IEEE 802.11ac standard of broadband technology	IEEE
Fog Node Cluster	Commonly referred to as logical fog node, this represents a group of nodes that are managed and orchestrated as a single logical entity in the fog.	OpenFog Consortium
Fog Computing	Fog computing is a system-level horizontal architecture that distributes resources and services of computing, storage, control and networking anywhere along the continuum from Cloud to Things. It is a: <ul style="list-style-type: none"> • Horizontal architecture: Support multiple industry verticals and application domains, delivering intelligence and services to users and business • Cloud-to-Thing continuum of services: Enable services and applications to be distributed closer to Things, and anywhere along the continuum between Cloud and Things 	OpenFog Consortium

	<ul style="list-style-type: none"> System-level: Extend from the Things, over the network edges, through the Cloud, and across multiple protocol layers – not just radio systems, not just a specific protocol layer, not just at one part of an end-to-end system, but a system spanning between the Things and the Cloud <p>Note: NIST defines fog as “A horizontal, physical or virtual resource paradigm that resides between smart end-devices and traditional cloud or data centers. This paradigm supports vertically-isolated, latency-sensitive applications by providing ubiquitous, scalable, layered, federated, and distributed computing, storage, and network connectivity.”</p>	
Fog as a Service (FaaS)	A service abstraction method where fog networks and services are provided by a centralized infrastructure and shared across multiple applications, or use cases. It is related to the cloud concepts of IaaS, PaaS and SaaS.	OpenFog Consortium
Fog Deployment	A collection of networked fog nodes from thing to cloud that implements fog computing.	OpenFog Consortium
Fog Node	The physical and logical network element that implements fog computing services that allow it to interoperate with other fog nodes. It is somewhat analogous to a server in cloud computing. Fog nodes may be physical, logical, or virtual fog nodes and may be nested (e.g. a virtual fog node on a physical fog node).	OpenFog Consortium
Gateway	A Gateway is a forwarding element, enabling various local networks to be connected.	IOT-A
Global Storage	Storage that contains global information about many entities of interest. Access to the global storage is available over the internet.	IOT-A
Greenfield	A network deployment that is not constrained by existing deployments, but can instead use a completely new and optimized architecture. This is contrasted with Brownfield (see definition above).	OpenFog Consortium
Hybrid Cloud	Policy-based and coordinated service provisioning, use and management across a mixture of internal and external cloud services.	Gartner
Identity	Properties of an entity that makes it definable and recognizable.	IOT-A
Industry 4.0	Refers to the fourth industrial revolution, following the first (mechanization of production through water and steam power), second (use of electricity for mass production), and third (use of electronics and IT for automation). Experts believe that the fourth revolutionary leap will entail full computerization of traditional industries. A key element of Industry 4.0 is the Smart Factory marked by adaptability, resource	Nexus

	efficiency and ergonomics as well as intelligent processes and communication. Technological basis are cyber-physical systems and the Internet of Things.	
Industrial Internet	An Internet of things, machines, computers and people, enabling intelligent industrial operations using advanced data analytics for transformational business outcomes.	Industrial Internet Consortium
Information Model	<p>An information model is a representation of concepts, relationships, constraints, rules, and operations to specify data semantics for a chosen domain of discourse. The advantage of using an information model is that it can provide sharable, stable, and organized structure of information requirements for the domain context.</p> <p>The information model is an abstract representation of entities, which can be real objects such as devices in a network, or logical, such as the entities used in a billing system. Typically, the information model provides formalism to the description of a specific domain without constraining how that description is mapped to an actual implementation. Thus, different mappings can be derived from the same information model. Such mappings are called data models.</p>	Autol
Informative Requirements	A component of requirements that provides supplementary information about why a formal requirement is needed or how it should be implemented. This is related to Normative requirements.	OpenFog Consortium
Infrastructure as a Service (IaaS)	<p>A standardized, highly automated offering, where compute resources, complemented by storage and networking capabilities are owned and hosted by a service provider and offered to customers on-demand.</p> <p>IaaS is of the four service abstraction models used in Fog (along with PaaS, SaaS and FaaS)</p>	Gartner
Infrastructure Services	Specific services that are essential for any IoT implementation to work properly. Such services provide support for essential features of the IoT.	IOT-A
Integrity	Assurance that the information is authentic, complete and can be relied upon to be sufficiently accurate for its purpose. It refers to whether the information is correct and can be trusted and relied upon.	ISO-27001
Interchangeability	In fog systems, this is the capability of fog nodes to perform the functions of one another in order to be substituted. Interchangeable fog nodes may	OpenFog Consortium

	<p>be of different types: A physical fog node may be replaced by a logical or a virtual fog node.</p> <p>There are two types of Interchangeability: temporary interchangeability, where fog nodes can function in the place of the other during certain parts of their life cycles; and permanent interchangeability, where fog nodes can function in the place of the other throughout the entire life cycle.</p>	
Interconnectivity	<p>In fog systems, this is the communications capability of fog nodes to exchange and interpret information with one another. It can be further differentiated into: syntactic interconnectivity, which is the use of common communication protocols and data formats for information exchanges; and semantic interconnectivity, the application of formal interpretation or data models to the information exchanged.</p>	OpenFog Consortium
Internet	<p>A loose confederation of independent yet interconnected networks that use the Transmission Control Protocol/Internet Protocol (TCP/IP) protocols for communications. The Internet evolved from research done during the 1960s on a network called the ARPANet. It provides universal connectivity and three levels of network services: connectionless packet delivery, full-duplex stream delivery, and application-level services.</p>	Gartner
Internet of Things (IoT)	<p>The digital network is soon going to connect physical objects (“things”), persons, machines, devices and processes. Contrary to the Internet as we know it, where only persons have digital identities, the Internet of Things equips physical objects with digital identities. The objects are embedded with software, electronics and sensors that allow them to communicate with other objects or persons in the digital or physical world. IoT will transform all industries – it is expected that the new connectivity will set off automation in almost all fields of business. Establishing secure infrastructures and trustworthy identities is vital for the successful deployment of this new kind of network.</p>	Nexus
Interoperability	<p>The ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged. (ISO/IEC 17788:2014).</p> <p>In fog systems, it is the ability of two or more fog nodes, systems or components to coordinate operations, provide and receive services from</p>	OpenFog Consortium

	<p>other systems and to use the services interchangeably so as to operate effectively together.</p> <p>There are two types of interoperability: syntactic interoperability, the use of a common convention for resource/service provisioning; and semantic interoperability, the addition of formal interpretation and specification to the resources and services provided. Semantic interoperability often adopts the approach of adding meta-data specifications to the APIs.</p>	
IoT Service	Software component enabling interaction with resources through a well-defined interface. Can be orchestrated together with non-IoT services (e.g., enterprise services). Interaction with the service is done via the network.	IOT-A
Local Storage	Special type of resource that contains information about one or only a few entities in the vicinity of a device.	IOT-A
Logical Fog Node	Also referred to as a fog cluster, this is one or more physical or virtual nodes that abstracts a group of resources and presents itself as a single fog node to other fog nodes for management, orchestration, and other fog computing services for interoperability with other fog nodes. A logical fog node can be used, for example, to encapsulate an IaaS or PaaS cluster or a redundant group of nodes and provide a single point of contact to other fog nodes. The components of the logical fog node may or may not be exposed as individual fog node and may be physical or virtual.	OpenFog Consortium
LTE	Long Term Evolution commonly used in 4G.	3rd Generation Partnership Project (3GPP)
Machine Learning	A type of data analysis technology that extracts knowledge without being explicitly programmed to do so.	Gartner
Manageability	The ability of a system to be discovered, configured, modified, deployed, controlled, and supervised by means of self-control or by external controls. In fog environments, manageability facilitates many dimensions of reliability, availability, and serviceability.	OpenFog Consortium
Microservices	Microservices can be considered a specialization or extension of service-oriented architectures (SOA) used to build distributed software systems. As with SOA, services in a microservice architecture are processes that communicate with each other over a network in order to fulfill a goal. Also, like SOA, these	Wikipedia

	services use technology-agnostic protocols. The microservices' architectural style is a first realization of SOA that followed the introduction of DevOps and is becoming more popular for building continuously deployed systems. SOA is more focused on reusability and segregation whereas microservices focus on replacing a large application(s), with a system that can incrementally evolve and is easier to manage.	
Middleware	Middleware is computer software that provides services to software applications beyond those available from the operating system. It can be described as "software glue". Middleware makes it easier for software developers to implement communication and input/output, so they can focus on the specific purpose of their application.	Wikipedia
Minimum Viable Interface (MVI)	An interface between architectural elements that supports a minimum level of functionality. Over time MVIs will grow and evolve to support more advanced functions	OpenFog Consortium
Modularity	A property of network elements where individual capabilities can be added or removed without substantial impact of other components.	OpenFog Consortium
Multi-access Edge Computing (MEC)	A standard that offers cloud-computing capabilities and an IT service environment at the edge of the network.	ETSI Multi-access Edge Computing (MEC)
Multi-Cloud	The use of multiple cloud computing services in a single heterogeneous architecture.	Wikipedia
Multi-tenancy	Architecture where multiple applications from multiple users coexist such that each user and the user's applications are unaware of other users/tenants and their applications even if sharing resources. Each tenant receives a dedicated share of the application including data, configuration, user management, individual functionality and non functional properties.	OpenFog Consortium
Network resource	Resource hosted somewhere in the network, e.g., in the cloud.	IOT-A
Normative Requirement	A component of requirements that provides the formal language enabling conformance of a requirement to be tested, supplemented by informative requirements.	OpenFog Consortium
On-device Resource	Resource hosted inside a Device and enabling access to the Device and thus to the related Physical Entity.	IOT-A
On-Premises Hardware and Software	On-premises hardware and software (sometimes abbreviated as "on-prem") is installed and runs on computers on the premises (in the building) of the person or organization using the software, rather than at a remote facility such as a server farm or cloud.	OpenFog Consortium

Operational Technology	Operational Technology (OT) is the use of computers (or other processing devices) to monitor or alter the physical state of a system, such as the control system for a power station or the control network for a rail system. The term has become established to demonstrate the technological and functional differences between traditional IT systems and <u>Industrial Control Systems</u> environment, the so-called "IT in the non-carpeted areas".	Wikipedia
Orchestration	Centralized or distributed automated processes by which a service is initially placed in order to establish the Service Level Agreement (SLA) that the consumer of that service expects. The service lifecycle is then continually monitored and measured to ensure that the SLA is maintained and when an anomaly is detected, the orchestrator remediates with minimal or no impact to the customer's running applications and services without an outage. Ideally, an orchestration solution understands the customer's SLA and ensure that the SLA is maintained, even as the individual systems and resources that support the customers' service fail and recover.	OpenFog Consortium
Physical Entity	An entity that has a physical existence.	Vocabulary.com
Physical Fog Node	A single physical node with physical compute, storage, and network resources that interoperates with other fog nodes through fog management, orchestration, and other fog computing service interfaces. It can run local applications as virtual machines (VMs), containers, microservices, etc. Physical fog nodes may provide management of other devices such as sensors and actuators that connect to the node so that these devices can be managed through the physical fog node.	OpenFog Consortium
Platform	Common elements of a system that can be used by multiple applications. Examples of platform elements could include operating systems, protocol stacks, common hardware modules, security solutions, etc.	OpenFog Consortium
Platform as a Service (PaaS)	A broad collection of application infrastructure (middleware) services (including application platform, integration, business process management and database services). One of the four service abstraction models used in Fog (along with IaaS, SaaS and FaaS)	Gartner
Private Cloud	Private cloud is cloud infrastructure operated solely for a single organization, whether managed	Wikipedia

	internally or by a third-party, and hosted either internally or externally.	
Reference Architecture	A Reference Architecture (RA) is an architectural design pattern that indicates how an abstract set of mechanisms and relationships realizes a predetermined set of requirements. It captures the essence of the architecture of a collection of systems. The main purpose of a Reference Architecture is to provide guidance for the development of architectures. One or more reference architectures may be derived from a common reference model, to address different purposes/usages to which the Reference Model may be targeted.	IOT-A
Reference Model	A reference model is an abstract framework for understanding significant relationships among the entities of some environment. It enables the development of specific reference or concrete architectures using consistent standards or specifications supporting that environment. A reference model consists of a minimal set of unifying concepts, axioms and relationships within a particular problem domain, and is independent of specific standards, technologies, implementations, or other concrete details. A reference model may be used as a basis for education and explaining standards to non-specialists.	The Organization for the Advancement of Structured Information Standards (OASIS-RM)
Reliability	Ability of a system or component to perform its required functions under stated conditions for a specified period of time.	ISO/IEC 27040:2015
Resilience	The condition of the system being able to avoid, absorb and/or manage dynamic adversarial conditions while completing assigned mission(s), and to reconstitute operational capabilities after casualties.	Industrial Internet Consortium
Resource	A compute, storage, or network function that provides for or by a fog node in support of itself or applications running on the fog node.	OpenFog Consortium
Requirement	A quantitative statement of business need that must be met by a particular architecture or work package.	TOGAF9
Scalability	A property of networks where their capabilities can grow or shrink without undue expense of loss of efficiency	OpenFog Consortium
Sensor	A sensor is a special Device that perceives certain characteristics of the real world and transfers them into a digital representation.	IOT-A
Security	A condition that results from the establishment and maintenance of protective measures that enable an enterprise to perform its mission or critical functions despite risks posed by threats to	CNSSI-4009 / OpenFog Consortium

	its use of information systems. Protective measures may involve a combination of deterrence, avoidance, prevention, detection, recovery, and correction that should form part of the enterprise's risk management approach. In fog environments, security refers to the protection and risk mitigation from unauthorized access of physical and virtual entities.	
Service	Services are the mechanism by which needs and capabilities are brought together	OASIS-RM
Smart Gateway	A Gateway is a forwarding element, enabling various local networks to be connected. A Smart (or Intelligent) Gateway additionally provides more resources for local (edge) computing. These resources can include middleware, microservices and applications. As such, a Smart (or Intelligent) Gateway begins to resemble a fog Node, as a network element that provides some fog computing services. Smart Gateways and fog Nodes are thus also Appliances.	OpenFog Consortium
Software as a Service (SaaS)	Software that is owned, delivered and managed remotely by one or more providers. This is one of the four service abstraction models used in fog (along with IaaS, PaaS and FaaS)	Gartner
Storage	Special type of Resource that stores information coming from resources and provides information about Entities. They may also include services to process the information stored by the resource. As Storages are Resources, they can be deployed either on-device or in the network.	IOT-A
System	A collection of components organized to accomplish a specific function or set of functions.	IEEE -1471-2000
Thing	Generally speaking, any physical object. In the term 'Internet of Things' however, it denotes the same concept as a Physical Entity.	IOT-A
Unconstrained Network	An unconstrained network is a network of devices with no restriction on capabilities such as storage, computing power, and / or transfer rate.	IOT-A
Use Case	A collection of one or more applications that solve a specific IoT problem. Each vertical market may have several use cases.	OpenFog Consortium
Users	Entities that benefit from fog functions; these could be human or machine-based.	OpenFog Consortium
Utilization	The portion of the capacity of a resource (processor, link, storage) that is actually used.	OpenFog Consortium
Vertical / Vertical Market	A partition of the total Internet / cloud / IoT marketplace related to a specific industry or economic segment. A vertical may include several use cases, each of which in turn could include several applications.	OpenFog Consortium
View	The representation of a related set of concerns. A view is what is seen from a viewpoint. An	TOGAF 9

	architecture view may be represented by a model to demonstrate to stakeholders their areas of interest in the architecture. A view does not have to be visual or graphical in nature.	
Viewpoint	A definition of the perspective from which a view is taken. It is a specification of the conventions for constructing and using a view (often by means of an appropriate schema or template). A view is what you see; a viewpoint is where you are looking from - the vantage point or perspective that determines what you see.	TOGAF 9
Virtual Entity	Computational or data element representing a Physical Entity. Virtual Entities can be either Active or Passive Digital Entities.	IOT-A
Virtual Fog Node	A virtual machine, container, microservice, or application that presents itself as a fog node and therefore provides management, orchestration, and other fog computing service interfaces for interoperability with other fog nodes. A virtual fog node can run on a physical or logical fog node or even the cloud, but only exposes its virtual resources and capabilities to the fog. The host and the virtual fog node should be mutually aware of each other and the relationships must be updated if the virtual fog node migrates to another host.	OpenFog Consortium
Wireless communication technologies	Wireless communication is the transfer of information over a distance without the use of enhanced electrical conductors or "wires". The distances involved may be short (a few meters as in television remote control) or long (thousands or millions of kilometers for radio communications). When the context is clear, the term is often shortened to "wireless". Wireless communication is generally considered to be a branch of telecommunications.	Wikipedia WI
Wire line communication technologies	A term associated with a network or terminal that uses metallic wire conductors (and/or optical fibers) for telecommunications.	setzer-messtechnik2010
Wireless Sensors and Actuators Network	Wireless sensor and actuator networks (WSANs) are networks of nodes that sense and, potentially, control their environment. They communicate the information through wireless links enabling interaction between people or computers and the surrounding environment.	Organisation for Economic Co-operation and Development (OECD2009)

NOTE: The terms in this guide are provided for purposes of clarifying usage of terms specific to distributed computing environments. These terms are subject to revision based on future industry input.

We welcome the creation of additional terms to this list. To submit a term for consideration, please contact us at info@openfogconsortium.org.