

gistNetwork
 gist Network Concepts for a virtual or actual network (communication, pipelines etc)

Base URI : <https://ontologies.semanticarts.com/o/gistNetwork>
 Version URI : <https://ontologies.semanticarts.com/o/gistNetwork9.0.0>
 Default Namespace :
 Default Comment: rdfs:comment
 Default Label : rdfs:label

Namespaces

gist <https://ontologies.semanticarts.com/gist/>

Imports

URI : <https://ontologies.semanticarts.com/o/gistMagnitude9.0.0>
 Location : <gistMagnitude9.0.0.owl>

URI : <https://ontologies.semanticarts.com/o/gistContent9.0.0>
 Location : <gistContent9.0.0.owl>

URI : <https://ontologies.semanticarts.com/o/gistCategory9.0.0>
 Location : <gistCategory9.0.0.owl>

URI : <https://ontologies.semanticarts.com/o/gistTemporalRelation9.0.0>
 Location : <gistTemporalRelation9.0.0.owl>

URI : <https://ontologies.semanticarts.com/o/gistPlace9.0.0>
 Location : <gistPlace9.0.0.owl>

gist:license
<https://creativecommons.org/licenses/by-sa/3.0/>

gist:NetworkLink
 a link in a network. This is the abstractino of the network. The physical instantiation couple be pipes, or wire but may also be non physical such as wireness networks or organization structures

rdfs:label
 Networkd Link

gist:hasFromNode
 some gist:NetworkNode

gist:hasToNode
 some gist:NetworkNode

gist:NetworkNode
 a node in a network. Note the network is the abstract representation of the network. It is physically instantiated with equipment, or in some cases People.

rdfs:label
 Network Node

gist:hasIncumbent
 some

--- OR ---

gist:PhysicalIdentifiableItem

gist:TemporalRelation

gist:Network
 A network is a connected set of links and nodes

--- AND ---

rdfs:label
 Network

gist:hasMember
 some

--- OR ---

gist:NetworkNode

gist:NetworkLink

gist:Artifact

gist:EquipmentType
 Categories of equipment

rdfs:label
 Equipment Type

Subclass of
 gist:Category

Note that an organizat modeled as a network. are positions, from the are reports to relationsh incumbents

gist:Artifact
 An intentional person made thing, could be physical or content

--- AND ---

rdfs:label
 Artifact

--- OR ---

gist:Content

gist:IntellectualProperty

gist:Equipment

gist:Building

gist:PhysicalSubstance

gist:goal
 some gist:Function

gist:Equipment
 Tangible property other than land or buildings. Any kind of equipment, could be machine, router, car etc.

--- AND ---

rdfs:label
 Equipment

gist:PhysicalIdentifiableItem

gist:categorizedBy
 some gist:EquipmentType

gist:Function
 A function is what a specific made item is intended to do. For instance: transmit electricity, provide ballast, control ambient temperature.

rdfs:label
 Function

Subclass of
 gist:Intention

gist:networkConnection
 abstract connection for when connections are undirected

rdfs:label
 Network Connection

gist:hasFromNode
 The connections at the abstract level of a network. Note this is directed but the parent is the undirected version

rdfs:label
 Has From Node

gist:hasToNode
 The connections at the abstract level of a network. Note this is directed but the parent is the undirected version

rdfs:label
 Has To Node

gist:hasIncumbent
 What equipment or person is currently in this node. Note to create a temporal view make a TemporalRelation for this property

rdfs:label
 Has Incumbant

gist:contributesTo
 The parts of a system contribute to the goal/ function of the whole system

rdfs:label
 Contributes To

gist:System
 A system is an artifact with component parts where the parts contribute to the goal of the system

--- AND ---

rdfs:label
 System

gist:hasDriectPart
 some gist:Component

gist:Artifact

gist:Component
 A component is an artifact that contributes to a system. Could be simple mechanical such as the float contributing to the toilet tank maintaining a constant level, or much more complex as in the interenet of things

--- AND ---

rdfs:label
 Component

gist:Artifact

gist:contributesTo
 some gist:System

gistIoT

gist Internet of Things. This is meant to be the minimal covering concepts for IoT

Base URI : <https://ontologies.semanticarts.com/o/gistIoT>
Version URI : <https://ontologies.semanticarts.com/o/gistIoT9.0.0>
Default Namespace :
Default Comment: `rdfs:comment`
Default Label : `rdfs:label`

Namespaces

gist <https://ontologies.semanticarts.com/gist/>

Imports

URI : <https://ontologies.semanticarts.com/o/gistNetwork9.0.0>
Location : [gistNetwork9.0.0.owl](#)

gist:license

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gist:Sensor

A device that can detect something and report it. Light sensors, temperature sensors,

rdfs:label
Sensor

Subclass of
gist:Equipment

gist:categorizedBy
some **gist:PhenomenaType**

gist:produces
some **gist:MessageDefinition**

gist:viableRange
some **gist:Place**

gist:PhenomenaType

The things that a sensor can sense, such as light, heat, current, moisture et

rdfs:label
Phenomena Type

Subclass of
gist:Category

gist:Actuator

A device that can affect the real world via a message interface

rdfs:label
Actuator

Subclass of
gist:Equipment

gist:categorizedBy
some **gist:PhysicalActionType**

gist:accepts
some **gist:MessageDefinition**

gist:PhysicalActionType

The effects to be realized in the real world, such as lifting a garage door, turning off a valve, dropping cadmium rods etc

rdfs:label
Phenomena Type

Subclass of
gist:Category

gist:accepts

The types of input messages that will be allowed

rdfs:label
Accepts

gist:viableRange

The area over which the sensor can sense (might be a small geospatial area or a specific wire in a circuit)

rdfs:label
Viable Range

gist:respondsTo

The set of sensors that a controller is attached to

rdfs:label
Responds to

gist:directs

The set of actuators that a controller can affect

rdfs:label
Directs

gist:Controller

A device that takes messages or signals from a sensor and decides through algorithms whether and which actuator to fire via messages

--- AND ---

rdfs:label
Controller

gist:Equipment

gist:categorizedBy
some **gist:ControllerType**

gist:respondsTo
some **gist:Sensor**

gist:directs
some **gist:Actuator**

gist:MessageDefinition

Each pulse from a Sensor is reflected in a message, as well as each instruction to an Actuator

rdfs:label
Message Definition

Subclass of
gist:SchemaMetaData

The sensors and actuators here are modeled as the actual devices, meaning they would typically have serial numbers and the like

It would be possible to build an IoT abstract network, derived from Network that could define it in the abstract.

gistNetDeprecated

Concepts that have been deprecated since the last external release

Base URI : <https://ontologies.semanticarts.com/o/gistNetDeprecated>
Version URI : <https://ontologies.semanticarts.com/o/gistNetDeprecated9.0.0>
Default Namespace :
Default Comment: [rdfs:comment](#)
Default Label :

Namespaces

gist <https://ontologies.semanticarts.com/gist/>

Imports

URI : <https://ontologies.semanticarts.com/o/gistIoT9.0.0>
Location : [gistIoT9.0.0](#)

Change Log Management

-As you work, record changes on the change log as version X.x until it is time to save out a release (internal or external)
-Then, before saving out a release, update all change log entries marked as "X.x" to the version number you are about to save out (this should be all changes since last release)

gistX.x Change Log

KEY for Change Log

V: Visio/Visualization changes only, not affect the owl (callouts, layout, grouping etc)

CL: for clarity only, better comments, fixing typos, laying out differently, etc.

AD: purely additive, will not affect anything already existing.

RF: refactoring, no semantic import. Includes changing names where old name is deprecated.

SU: has semantic import from usage perspective, e.g. a comment changes usage which could give semantic errors.

SI: has semantic import from inference perspective. axiom added, removed, changed etc.

BI: Backwards incompatible

To be included in ChangeLog of next external release:

gist 7.5.1 Change Log

7.5.1	3/3/2017	RF (DMc] there were two ranges on gist:toAgent, removed the socialBeing one
7.5.1	3/3/2017	RF (DMc] moved the formal definition of Category into gistTop
7.5.1	3/3/2017	RF (DMc] moved gist:categorizedBy to gistTop
7.5.1	3/6/2017	BI (DMc] fixed spelling of gist:Greenwich (was Grenich)
7.5.1	3/6/2017	RF (DMc] moved universal date time properties to Top
7.5.1	3/6/2017	CL (DMc] gitsTop added bit to the comment
7.5.1	3/6/2017	AD (DMc] gistTime added DateInstant, HumanInstant and system instant with the respective durations
7.5.1	3/7/2017	RF (DMc] gistTime gistTop moved localDateTime properties to top, so that we could have one universal way of representing all time instants
7.5.1	3/11/2017	BI (DMc] gistMeasure sadi that ohasOrderedMember was Inverse Functional, but that wasn't set
7.5.1	3/12/2017	BI (DMc] Eliminated Physical Thing from Core
7.5.1	3/20/2017	RF DMc moved conversionOffset to top from unit

gistNet8.1.0 change log

9.0.0	8/5/2018	AD DMc Created gist Network and gist IoT
9.0.0	3/27/2019	AD DMc Added system and contoller and artifact and upgraded a bunch of definition