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THINGS AND SMART CITIES

Internet of things and smart cities and communities –
Frameworks, architectures and protocols

Functional framework of Web of Objects

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Draft new Recommendation ITU-T Y.4452 (Y.WoO-fw)

Functional framework of Web of Objects

Summary

Recommendation ITU-T Y.4452 provides the functional framework of Web of Objects (WoO) including the concept, the reference model, functional capabilities and information models.

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Functional framework of Web of Objects

1. Scope

The Web of Objects (WoO) supports a functional framework to deploy Internet of things (IoT) services in the World Wide Web environment.

This Recommendation covers the followings:

- concept of WoO;
- the reference model and functional capabilities of WoO;
- information models of WoO.

2. References

[ITU-T Y.4000/Y.2060] Recommendation ITU-T Y.4000/Y.2060 (2012), *Overview of the Internet of things*.

[ITU-T Y.4552/Y.2078] Recommendation ITU-T Y.4552/Y.2078 (2016), *Application support models of the Internet of things*

3. Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 Internet of things (IoT) [ITU-T Y.4000]: A global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on, existing and evolving, interoperable information and communication technologies

3.1.2 object [b-ITU-T Y.4404]: An intrinsic representation of an entity that is described at an appropriate level of abstraction in terms of its attributes and functions.

NOTE 1 – An object is characterized by its behaviour. An object is distinct from any other object. An object interacts with its environment including other objects at its interaction points. An object is informally said to perform functions and offer services (an object which makes a function available is said to offer a service). For modelling purposes, these functions and services are specified in terms of the behaviour of the object and of its interfaces. An object can perform more than one function. A function can be performed by the cooperation of several objects.

NOTE 2 – Objects include terminal devices (e.g., used by a person to access the network such as mobile phones, Personal computers, etc.), remote monitoring devices (e.g., cameras, sensors, etc.), information devices (e.g., content delivery server), products, contents, and resources.

3.1.3 resource [b-IETF RFC 3986]: This specification does not limit the scope of what might be a resource; rather, the term "resource" is used in a general sense for whatever might be identified by a URI.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 virtual object (VO): A virtual representation of a real world object (e.g., sensor, device, task, process and information).

NOTE - Real world objects are identifiable through their virtual representation.