Web of things

Better then IOT:

Scalable, server can be at many scales, serve vast number of users

Implement IP, HTTP, web server on every embedded device is fucking stupid

REST as a common standard

Has all kinds function as pre-build standards like HTTPS, OAuth, IFTTT…

Easy to create services across platforms

Sematic and search engine indexable

Both human and machine friendly

Everything,-not just “things”- has a URI

The idea is to make everything talk, so it can be understand by at least someone. Then they all can be accessed via same web interface.

IOT bad: Hard for devices with different protocols to connect and communicate.

Different protocol different media.

Catches:

Dumb and smart device? How dumb is will be?

To meet the market, the cost must be extremely low for the dumb device.

What should be a web server and what not?

Connection and communication between dumb device? If they are dumb enough, they do not talk to each other. The dumb thing about this is everything now need a hub/proxy/gateway. Or is it that bad? Or the client can be a -integrates- a hub/proxy/gateway. But this is suit for ADHOC application, and does not solve the intercommunication of things.

Smart devices should not just be a gateway or a communication proxy, there must be more, it has to do more computation to be called smart.

As I have stated in my PhD thesis the best form is decentralized and self-organize, so if the devices are not bound to a specific proxy, and all things should be able to use meta-data to discover useful information.

Individual things should not be important.

Web is not a silver bullet, although it is possible to implement event base behavior on web, but it is not easy for constrained devices.

If it is only point 2 point connection, RESTful is meanless.

CoAP is a joke. Why bother making things supporting a HTTP like yet not HTTP protocol, which adds up the complicity yet solving no problems.

For discovery each wot server can advertise its entry point uri

For security of the dumb things, does it really necessary to have authentication and authorization? Of delegate this to its proxy, and only have secure communication with its only proxy. And there sure will be a thing connected to multiple proxy scenario how to handle this? Does it only happens when using public language? Or it speaks multiple languages?

The proxy the hub is not what you think of today. The proxy I described here is a smart thing it is a part of wot, it is a thing. Others are dumb things they are like parts of smart things smart things + dumb things= wot. Proxy may exits widely. It’s not like only thing in your home, any smart thing can be a proxy. Wot is wot network for web servers thus the proxy, dumb things is accessories of proxy, so proxy is not an accurate expression.

A search service is needed to discovery wot web servers. Discover dumb things can be done in various traditional ways, discover wot web server in sub net is easy can be done in many ways. But for discover services in the internet like using search engine how is it done? Yes just like search engines, this search engine can also be in a sub net serving or in the www. This key is to describe things and using correct terms to search (like adjacency, function etc.).

The search uses not only the metadata but also the resource value (e.g. sensor output). Like search a light that is in blue or in blue for last 3min.

For WoT or simple IoT, a potential problem is that, malicious user ca hack them to do DDoS attack, since they are all connected to the internet.

For devices that are only able to serve a small numbers of clients or only needed to be accessed by a few and adjacent clients it makes no sense connecting to the internet.

For CFET 2 one big difference is its not

CFET is divided into 2 layers dumb and smart.

CFET dumb devices talk via CFET dumb protocol (CDP). This is not a protocol is a semantic design patter of how to use a protocol. It also falls into layers:

Language: This is the lowest layer. It covers all traditional protocol scope. Like physical, media, encryption, and protocol. If you are in different languages the message you get will be considered as noise or you just cannot get it just like in nature world.

Identity: If you understand the language, then this message you get is somehow meaningful to you. You can at least extract data that is embedded into this message. And you will definitely get an information called identity this indicate the message is for you or not. Note, some protocol will only let the one that is designated receiver to receive the message. So the identity may be redundant in this case. And that is to say the identity is handled by language. If the message is not for you, just discard it.

Knowledge: this is CFET specific layer, if this message is for you and you can parse it. That you will need to extract status, config, method out of it. And if something like the status is not what you expected and you just don’t know what it is, then this is out of your knowledge base.

CDP is designed by following how the people and animal communicate.