WebForce International Contribution

Telecommunication Development Advisory Group (TDAG)

Introduction : This short exploratory contribution is made by Dr. Francis Muguet, under the aegis of WebForce International, ITU-D sector member, that is kindly acknowledged.

In this brief note, we wish to raise awareness about the fact that it is technically feasible to carry several distinct DNS services related to different classes of networks with the help of current DNS resolving software such as BIND which is maintained by the Internet Systems Consortium (ISC), whenever they are in full compliance with the Request for Comments (RFCs).

It is little known there are already different classes of DNS services based on the Chaosnet and Hesiod protocols (just of historic significance.). The internet class is by far the most popular. It is possible to implement a distinct DNS service for any TCP/IP-based network that could operate seemlessly alongside the Internet. The field classs allows for the possibility of about 65500 classes, which could considerably expand the namespace, and introduce an healthy and legal competition to the ICANN system that rules the internet class

This approach must be completely differentiated from the so-called alternate root servers of ill repute. In fact ICANN recommended in May 2001 the approach that we are advocating here :

We are further proposing **Net4D**, a new set of classes or networks to empower the second generation of the Web: the **Semantic Web** (SW). Net4D classes are not designed to provide minimal services as ICANN does, it has in mind to provide value added services, in view to empower the Semantic Web. Net4D domain holders should, , abide by a specific ontology, as a contractual requirement to the effect of establishing a pollution free zone concerning metadata, and providing pathway for the interoperability of metadata concerning specific activities following the Semantic Web approach. Two main Net4D networks/services are for the moment being considered :

- **Web4D:** The Network of People
- **EPC4D** : The Network of Things

One example of Web4D application could be the Linguistic SWgTLDs or LSWgTLDs. An extension shall be assigned to each language so that sites or sites' versions written in specific languages can be easily found and identified. It would facilitate greatly the task of search engines and would foster linguistic diversity and empower new strategies for automatic language translation. Other applications could be envisaged such an equitable commerce global market place (possibly operated by UNCTAD) and a trademark based namespace (possibly operated by WIPO). Namespaces related to next-generation networks (**NGN**) could be operated by **ITU**. Net4D networks should be open and inclusive to interact with others resolving schemes (eg Handle.net) through the use of the NAPTR record.

The current approach for the namespace of the network of things, the Object Naming Service (ONS 1.0) is in our opinion, oversimplistic. If the ONS is used each time information is requested concerning a physical object, it follows the namespace of things will order of magnitude larger that the one of the net of people. To link a "Bar Code" to a resource on the Web, the ONS scheme is quite simple and may be summarized in a few words for non-techies : A Bar Code (Electronic Product Code or EPC) is transformed into a URL on the domain onsepc.com (eg 000024.0614141.sgtin.id.onsepc.com). It is used a single domain name for the whole network of things !. This is not serious. It is a political choice that has been made only to avoid the ICANN toll gate for a new dedicated gTLD. For the Internet of Things, it is proposed instead to create EPC4D, a new semantic web empowered IP network class that would be vastly superior in terms of automated transactions, and where users could securely access and manage their own data and metadata corresponding to their own EPC4D, domain name. The EPC4D namespace could be managed by the GS1 consortium. In the case of the EPC4D class, linkage to the Handle.net system could be very fruitful whenever high security is required.

The role of the W3C that researches and develops, for the public good, open (non-proprietary) standards, protocols and languages for the Semantic Web should be acknowledged, and a substantial part of financial revenues, originating from the sales of WEB4D and EPC4D domains, should be allocated to support W3C activities.

Lastly, we wish to bring the attention on the Digital World Forum on Accessible and Inclusive ICT project (see also PC4D), which is a FP7 project in the field of Information and Communication Technologies (ICT-2007.9.1 International Cooperation: Development-related ICT research exploitation and cooperation roadmaps), that just started on January 2008. Collaboration with ITU efforts to bridge the Digital Divide (Connecting the unconnected by 2015) should be explored both in terms of process and events.

References : **Net4D**: http://net4D.org

Digital World Forum on Accessible and Inclusive ICT : http://digitalworld.ercim.org

PC4D : http://pc4D.org