V0.2
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Building a trusted namespace for Trademarks

A proposal to the World Intellectual Property Organization

Introduction

It is e!! "no n that #ra$emar"s are "e% e!ements that contri&ute in insure the sta&i!it% an$ efficienc% of commerce. So far, tra$emar"s ha'e not &een tru!% &een integrate$ into the internet $omain names, creating an en$!ess stream of !itigations. Namespace *classes* ma% pro'i$e a uni(ue opportunit% to &ui!$ from inception a truste$ Namespace for tra$emar"s not on!% for)e& sites &ut a!so for the Internet of #hings,

*ets first e+amine the current situation, an$ then present hat Namespace *classes* are, an$ ho the% or", &efore e+p!oring specific opportunities for #ra$emar"s.

First fundamental preliminary issues

#he Domain Name S%stem,DNS- as in'ente$ &% Dr. .au! Moc"apetris in /012. I34NN is re!%ing on the DNS. 4s for no , the on!% competitor to I34NN appears to &e the 5an$!e s%stem in'ente$ &% Dr. Ro&ert Kahn from the 3orporation for Nationa! Research Initiati'es ,3NRI, 6S4-. #he 5an$!e S%stem is pro'i$ing name reso!'ing ser'ices for $igita! o&7ects an$ other Internet resources, ith (uite a $ifferent approach an$ phi!osoph%. 3urrent app!ications of the 5an$!e s%stem are most!% !imite$ to !i&raries an$ aca$emic 7ourna!s. #he 5an$!e s%stem is &eing !iste$ as an 8emerging tren$8 &% the I#6, an$ I consi$er that this s%stem cou!$ one of the &est suite$ for the Internet of things , #he 3ha!!enges of the Internet of #hings, IGF 5%$era&a$ 2001 -. 5o e'er it is rea!istic to assess that the DNS is the o'er he!ming!% $ominant p!a%er, an$ it is correct to state that the DNS, as manage$ &% I34NN, is a *de facto* monopo!%

or a 9(uasi:monopo!%;.

3oncerning the Internet of things, the nameser'ice that has &een a$opte$ &% <.3 G!o&a! an$ GS/ is the =&7ect Naming Ser'ice ,=NS-. #he =NS operates through the DNS , hich is manage$ &% I34NN -, for e+amp!e an =NS o&7ect i$entifier is trans!ate$ into the $omain name :
00002>.0?/>/>/.sgtin.i$.onsepc.com hich re!ies on the .com g#*D an$ the onsepc.com $omain name.) hat is staggering is that a!! the =NS namespace, that shou!$ &ecome or$ers of magnitu$e !arger that a!! the e+isting DNS namespace goes through on!% one $omain name @. #he secon$ar% namespace +++.onsepc.com as for a!! $omain names is pri'ate!% manage$ &% the $omain name o ner that has a!! contro! o'er this namespace. #here is nothing ne in that regar$. #his =NS namespace is manage$ through a $ata&ase maintaine$ &% Verisign. Recent!%, another =NS root &ase$ in <urope :onsepc/.eu has &een a$$e$, hose $ata&ase is maintaine$ &% =range Ausiness Ser'ices. 4nother =NS root is propose$ in 3hina.
#he reso!ution of the .com an$ .eu e+tension is manage$ &% I34NN. #he reso!ution of onsepc.com $omain name is un$er I34NN contro!, hi!e the onsepc/.eu is un$er contro! of the <uropean cc#*D : <6Ri$.

3oncerning the Ne+t Generation Net or"s, hose *general idea behind NGN is that one network transports all information and services (voice, data, and all sorts of media such as video) by encapsulating these into packets, like it is on the Internet. NGNs are commonly built around the Internet Protocol, and therefore the term "all-IP" is also sometimes used to describe the transformation towards NGN* ,(uote$ from) i"ipe$ia -. I#6 offers a $etai!e$ $efinition of NGN. #here is one specific namespace for NGN : <N6M, a te!ephone num&er mapping manage$ &% I#6.

Towards an effective opening to competition through the use of DNS class namespaces

M% proposa! that it is possi&!e to open the competition, &% using the 'er% Domain Name S%stem,DNS- itse!f. #he proposa! is &eing presente$ un$er the name 9**Net4D**9 ,http:BBnet>$.org - ,ie Net or" for De'e!opment-. 4n out!ine as s"etche$ for the first time ,Net>D: Ne c!asses to &in$ peop!e an$ machines- at the Internet Go'ernance Forum ,IGF- in Rio in 200C. #he proposa! as presente$ ith more $etai!s ,#o ar$s an open go'ernance of the DNS s%stem - at the IGF in 5%$era&a$ in 2001, an$ it has &een recent!% presente$, =pening to competition the namespace infrastructure - at the) SIS 4ction *ine 32 ,I3# Infrastructure- Faci!itation Meeting ,20 Ma% 2000 -.

It is important to un$er!ine the !itt!e "no n fact that the current DNS s%stem as $esigne$ from the outset as a naming too! a'ai!a&!e for net or"s other than the Internet, specifica!!% the 3haosnet an$ 5esio$ net or"s. #hese net or"s, no on!% of historica! interest, ere ne'er un$er the go'ernance of the I<#F or I34NN. #he% are constituting 'er% significant !ega! prece$ents.

Such a $esign is imp!emente$ ith the he!p of a parameter name$ *class* that

$efines a net or" ith its o n specific an$ $istinct namespace. *Classes* are $efine$ &% the RF3 2020. <ach *class* is a autonomous namespace ith its o n DNS root ser'ers an$ its o n go'ernance.

Starting from the %ears /00D, imp!ementation of a num&er of a!ternati'e DNS roots fragmente$ an$ pertur&e$ the IN *class* manage$ &% I34NN. #herefore in 200/, I34NN itse!f recommen$e$ to ma"e use of unuse$ *classes,* especia!!% one of the 2D? c!asses for a 8pri'ate use8 for the purpose of an e+perimentation. 4!ternati'e DNS roots ha'e &een commercia! an$ technica! fai!ures.

#he Internet is using the *class* 8IN8 hose namespace is manage$ &% I34NN. #he 3haosnet an$ 5esio$ net or"s *class* parameter 'a!ue are respecti'e!% 35 an$ 5S. For a!! practica! purposes, the fie!$ *class* on!% current!% ta"es the 'a!ue 8IN8, &ut there are up to ?D,000 c!asses a'ai!a&!e an$ unuse$.

#he net or" soft are of an internet user inc!u$es a DNS c!ient soft are, a!so ca!!e$ 8reso!'er8 that is pointing to a DNS ser'er that sha!! ans er ith an I. a$$ress to a re(uest a&out a $omain name. DNS c!ients appear in man% app!ications ,&ro ser, ftp, emai! c!ient, etc. ..-.)hen a user accesses to the net or", in most cases, the DNS ser'er is $etermine$ &% $efau!t &% the IS.,. #he DNS ser'er, a!so &% $efau!t, ans ers ithin the c!ass 8IN8.

#he RF3s ,Re(uest For 3omments- are pu&!ishe$ &% the Internet <ngineering #as"Force ,I<#F- that 9*develops and promotes Internet standards, cooperating closely with the W3C and ISO/IEC standard bodies and dealing in particular with standards of the TCP/IP and Internet protocol suite. It is an open standards organization, with no formal membership or membership requirements. All participants and leaders are volunteers, though their work is usually funded by their employers or sponsors; for instance, the current chairperson is funded by VeriSign and the U.S. government's National Security Agency.*; ,from)i"ipe$ia-

It is the RF3 2020 that ta"es care of the (uestion of *classes*. In a$$ition to 35 an$ 5S c!asses an$ 2D? c!asses that an%one can free!% use them for 8pri'ate use8, the other ?D,000 c!asses are not %et assigne$ c!asses, an$ ma% &e assigne$ &% 8I<#F consensus8. If I<#F ere to ecie to &!oc" c!asses assignments to stif!e competition, one cou!$!egitimate!% as" h% I<#F, hose go'ernance sphere is !imite$ to the Internet, is entit!e$ to assign a c!ass to a net or" other than his o n ie: the Internet. 6n$er internationa! pu&!ic !a , go'ernance an$ ar&itrage &et een net or"s shou!$ &e the responsi&i!it% of an internationa! organiEation such as the Internationa! #e!ecommunication 6nion, a situation that has &een ac"no !ege &% I34NN in its artic!e > of incorporation: I34NN 9*shall operate [...] its activities in conformity with relevant principles of international law and applicable international conventions and local law" and "shall corporate as appropriate with relevant international organizations.*; :

It is propose$ to create other I. &ase$ net or"s, an$ thus using the same technica! pipes as the Internet, &ut !ega!!% $istinct, precise!% &ecause the% are using $istinct namespace *classes*.

For a *class* to &e usa&!e in practice, it is re(uire$ that the DNS c!ient or 8reso!'er8 is a&!e to recei'e from the DNS ser'er the I. a$$ress correspon$ing to a $omain name in this c!ass. #he AIND/ soft are is the &est "no n among DNS ser'er soft are &ut there are a fe others[2] .Most DNS c!ients an$ ser'ers $o not imp!ement comp!ete!% the RF3s, inc!u$ing RF3 2020. #he fie!$ *class* is often consiere as a fi+e$ 'a!ue ith IN. #herefore, these soft are c!ients an$ ser'ers sha!! ha'e to &e upate an$ that the *class* fie!$ must correspon$ to a true 'aria&!e. #his $oes not offer an% particu!ar technica! $ifficu!t%

4s an important conse(uence, this ou!$ re$efine the te+t:&ase$ search engines‘ mar"et, hich is current!% a!most a monopo!%, to a!!o the emergence for ne search engines using meta$ata as e!! as te+t.

4 'er% important point is that *classes* cou!$ use 6#F1 enco$ing, a!!o ing a natura!, simp!er an$ more efficient imp!ementation of mu!ti!ingua!ism, instea$ of the current s%stem, hose progress is 'er% s!o , hich is &ase$ on 4S3II an$ transcription 6#F1 R 4S3II.

Set another 'er% important point is the Internet of things hose go'ernance is nascent an$ hose namespace is e+pecte$ to &ecome or$ers of magnitu$e !arger than the current namespace. If for an% reason, goo$ or &a$, the 5an$!e S%stem $oes not emerge as the namespace techno!og% for the Internet of things, then, at the 'er% !east, the current o&7ect Naming Ser'ice ,=NS- shou!$ &e impro'e$ so that it operates ith one or se'era! *classes* in or$er to tru!% constitute in$epen$ent an$ interopera&!e Net or"s of =&7ects. It shou!$ &e in'estigate$ if one *class* of the Net or"s of =&7ects cou!$ interface ith the 5an$!e S%stem.

*ast &ut not !east, concerning Ne+t Generation Net or"s, it shou!$ &e (uite !ogica! that ne+t generation namespaces shou!$ &e $e'e!ope$ using *classes*.

From a po!itica! point of 'ie , the e+istence of ne *classes* is a "in$ of re'o!ution in the go'ernance of the namespaces of I.:&ase$ net or"s. It is a constructi'e re'o!ution ho e'er, &ecause re!ate$ go'ernances ma% co:e+ist technica!!%.

3oncerning DNS securit%, a centra!iEe$ securit% cou!$ then &e rep!ace$ &% $istinct $ecentra!iEe$ securit% s%stems re!ate$ to each *class*, offering a commercia! an$ po!itica! in$epen$ence for a!! p!a%ers. In the DNSS<3 s%stem the root signing authorit% ma% &e $istinct accor$ing to each *class*.

3oncerning economics, *classes* are opening the namespace mar"et to competition &et een potentia!!% ?D,000 p!a%ers an$ ou!$ en$ the monopo!% of the historic operator.

4t the scientific an$ techno!ogica! !e'e!, the *classes* a!!o inno'ation ,eg semantic e&, Mu!ti!ingua!ism, M2M, etc.....- to f!ourish.

Specific Applications for Trademarks :

4ccor$ing to the Nice agreement, the Internationa! 3!assification of #ra$emar"s comprises the >D c!asses. It is propose$ to affect >D DNS *classes* among the ?D000 *classes* a'ai!a&!e to map $irect!% the >D c!asses of tra$emar"s into the namespace. In this a%, &ran$s re!ate$ to $ifferent c!asses cou!$ co:e+ist peacefu!!% an$!ega!!% in the c%&erspace. <ach &ran$ cou!$ ha'e a $omain name in a $ifferent DNS *class* re!ate$ to its re!e'ant tra$emar" c!ass. #his ou!$ so!'e !ega! pro&!ems in a coherent fashion. It ou!$ a!so a!!o search engines to ta"e into account the tra$emar" c!ass parameter, hich the% cannot

$o at this moment. #he DNS *classes* are a"in to a ne $imension in the Namespace

It is 'er% important to un$er!ine that the DNS Mar" *classes* are of interest not on!% for mar"eting information concerning e& sites, &ut cou!$ &e of utmost importance concerning the Internet of things, here it &ecomes crucia! to chec" if a pro$uct is rea!!% re!ate$ to the &ran$ it c!aims to &e. It cou!$ &e a too! against counterfeiting.

#herefore,) I . = hi!e creating an$ managing the DNS Mar" *classes* cou!$ in a position se!! to tra$emar"s o ners, not on!% truste$ $omain names &ut 'a!ue: a$$e$ ser'ices such as he!ping tra$emar"s o ners to maintain their onto!ogies , meta$ata re!ate$ to tra$emar"s - for their pro$ucts.

Nee$!ess to sa%, this management cou!$ pro'i$e) I . = ith an a$$itiona!, an$ significant financia! re'enue stream.

Implementation of Classes **for Trademarks**

If the the genera! $ep!o%ment of *classes* cannot &e consiere imme$iate!% : e+cept in areas un$er centra!iEe$ go'ernance R one shou!$ consi$er e+perimenta! perio$s in 'arious areas or in 'arious communities ha'ing an interest in the pro7ect.

<+periments ma% &e performe$ not on!% at the !e'e! of a countr%, a region, a cit%, using one of the 2D? c!asses sche$u!e$ for pri'ate use, &ut a!so o'er a 'irtua! communit% sprea$ a!! o'er the or!$.

In the case of a region in the geographica! sense, for the e+perimenta! area, imp!ementation of *classes* must &e ensure$ in :
/- a!! DNS ser'ers of a!! ma7or IS.s operating in the area T
2- ser'ers an$ DNS c!ients, ser'ers an$ other e& app!ications, at, !oca! or remote!% !ocate$ companies, operating in the areaT
2- ser'ers an$ DNS c!ients, ser'ers an$ other e& app!ications, at !oca! ,or e'en nationa!- authorities, associations as e!! as in$i'i$ua!s operating in the area :
>- DNS c!ients an$ &ro sers of users participating in the e+periment .
#he participation of ma7or IS.s in the geographica! area shou!$ a re(uirement

In the case of tra$emar"s, the 'irtua! communit% approach might &e &etter suite$ to &e an e+perimenta! area. =ne cou!$ start ith a 'irtua! communit% compose$ ith sta"eho!$ers here the concern for tra$emar"s is at a premium , professiona! &u%ersT etc...-.
#he nee$ for DNS ser'ers of IS.s to imp!ement DNS *classes* reso!'ing is not as important in this case, if e pro'i$e gate a%s here the DNS *classes* reso!'ing is imp!emente$. 3ommunit% sta"eho!$ers, if the% notice that the DNS ser'ers of their IS.s are not reso!'ing DNS *classes* cou!$ use gate a%s.

Search engines, pro'ie that search engines ro&ots can access at one p!ace on the p!anet to DNS Mar"s *classes,* ma% ref!ect this information into their ans ers to (ueries from a!! o'er the or!$.

Conclusions

Namespace DNS Mar" *classes,* un$er) I . = $irect go'ernance, hi!e ena&!ing a truste$ namespace for &ran$s, is going to reinforce !ega! an$ commercia! securit%, 'ehic!e for economic gro th. It ou!$ certain!% constitute a "e% strategic e!ement that) I . = cou!$ &ring for ar$ in or$er to confront the g!o&a! economic crisis.