

## Net4D: a coherent multi-lingual DNS system and network

Moscow, 16 June 2008

## WORKS O! "nst#tute o\$ the "n\$or%&t#on Soc#et' (""S)

## \* +str&ct

"#rst-', we &re go#ng to r&#se &w&reness &+out the \$&ct th&t #t #s techn#c&--' \$e&s#+-e to c&rr' se.er&- d#st#nct / 0S ser.#ces re-&ted to d#\$erent c-&sses o\$ networ1s w#th the he-p o\$ current / 0S reso-.#ng so\$tw&re such &s 2"0 / wh#ch #s %&#nt&#ned +' the "nternet S'ste%s 3onsort#u% ("S3), whene.er the' &re #n \$u-- co%p-#&nce w#th the Re4uest \$or 3o%%ents (R,3s). "t #s -#tt-e 1nown there &re &-re&d' d#\$erent c-&sses o\$ / 0S ser.#ces +&sed on the 3h&osnet &nd \_es#od protoco-s (5ust o\$ h#stor#c s#gn#\$#c&nce.). 6he #nternet c-&ss #s +' \$&r the %ost popu-&r. "t #s poss#+-e to #%p-e%ent & d#st#nct / 0S ser.#ce \$or &n' 63!/"!7+&sed networ1 th&t cou-d oper&te se&%-ess-' &-ongs#de the "nternet. 6he \$#e-d c-&ss &--ows \$or the poss#+#-#t' o\$ &+out 68800 c-&sses, wh#ch cou-d cons#der&+-' e9p&nd the n&%esp&ce, &nd #ntroduce &n he&-th' &nd -eg&- co%pet##on to the "3 \* 00 s'ste% th&t ru-es the #nternet c-&ss. 6h#s &ppro&ch %ust +e co%p-ete-' d#\$erent#&ted \$ro% the so7c&--ed &-tern&te root ser.ers o\$ +&d reput&#on.

3oncern#ng "ntern&t#on&-#:ed / o%&#n 0&%es, the so-ut#on proposed +' -"3 \* 00 %&1es use o\$ & !un' 3ode th&t tr&ns\$or%s & un#code ch&#n ( gener&--' := 6,78) #nto &n \*S3"" ch&#n #n & un#4ue &nd re.ers#+-e w&'., or e9&%p-e http://<=>>?@A.#dn.#c&nn.org #s tr&ns\$or%ed #nto http://9n B h1&c+9\$&%.#dn.#c&nn.org.

6h#s &ppro&ch see%s -#1e & p&tch t&rgeted on-' for the use w#th & +rowser, &nd #t #s not s&t#s\$&ctor' #n pr&ct#ce for & gener&- purpose, for e9&%p-e for the %&#- @CDE F <=>>?@A .<\phi the word @CDE #s encoded #n ; 6.78 wh#-e <=>>?@A #s encoded w#th pun' code. 3utGp&ste #s #%poss#+-e &nd the cod#ng of app-#c&t#ons +eco%es 4u#te co%p-#c&ted. \*n #ntern&t#on&- e7%&#-protoco- #s 'et to +e \$\frac{\pmanule nk}{\pmanule nk} + \frac{\pmanule nk}{\pmanul

We &re there\( \text{fore propos\( \text{#ng Net4D} \), \( \text{\$ new set o\( \text{\$ c-\close{\close{k}} \) encod\( \text{#ng e.er'} \) where \( \text{#n & coherent w\( \text{\$ wo'} \) the st\( \text{\$ tr.} \).

We &re \$urther propos#ng Net4D, shou-d e%power the second gener&t#on o\$ the We+: the Semantic Web (SW). Oet4/ c-&sses &re not des#gned to pro.#de %#n#%&- ser.#ces &s "3\*00 does, #t h&s #n %#nd to pro.#de .&-ue &dded ser.#ces, #n .#ew to e%power the

Se%&nt#c We+. 0et4 / do%&#n ho-ders shou-d, *inter alia*, &+#de +' & spec##c onto-og', &s & contr&ctu&- re4u#re%ent to the e\$\$ect o\$ est&+-#sh#ng & :one o\$ trust concern#ng %et&d&t&, &nd pro.#d#ng p&thw&' \$or the #nteroper&+#-#t' o\$ %et&d&t& concern#ng spec##c &ct#.#t#es \$o--ow#ng the Se%&nt#c We+ &ppro&ch. 6wo %&#n <u>Oet4 /</u> networ1s/ser.#ces \$or the %o%ent under cons#der&t#on &re:

- Web4D: 6he 0etwor1 o\$!eop-e
- EPC4D: 6he 0etwor1 o\$ 6h#ngs

One e9&%p-e o\$ <u>We+4/</u> &pp-#c&t#on cou-d +e the <u>H#ngu#st#c SWg6H/s</u> or HSWg6H/s. \*n e9tens#on sh&-- +e &ss#gned to e&ch -&ngu&ge so th&t s#tes or s#tesl .ers#ons wr#tten #n spec#\$c -&ngu&ges c&n +e e&s#-' \$ound &nd #dent#\$#ed. "t wou-d \$&c#-#t&te gre&t-' the t&s1 o\$ se&rch eng#nes &nd wou-d \$oster -#ngu#st#c d#.ers#t' &nd e%power new str&teg#es \$or &uto%&t#c -&ngu&ge tr&ns-&t#on.