Bh 13 2s EE5$7O@l96Bg3X1!O@J8NX9V H/I=MQ;qNA

!V%^%k%A%a%G%#%"%G!<%?%Y!<%9@8@.$N>-MhA|!

— CMU EE;R1GA|?^=q4[%W%m%8%'%/%H Informedia rDL7$F —

Gn;N2]Dx 1 G/ 0f<j 0IO:*

J?@.8G/ 10 7n 11 F|

1 O8aK

J|Aw$NB?%A%c%s%M%k2=$dJ|Aw7ABV$NB?MM2=$JIKH<$$!"KD BgJNLN%^%k%A%a%G%#%" (FC$K2hA|) >pJs$,F|>oE*$KDs6!$5 lDD"$k!#$3Nh$&$J>u67K*$$$F!"HEMt9k>pJsNCf+ $i;kD0<T$,I,MWH9kbNrA*JL7FDs<(9k3H$d!">pJs $r?b$lN.7K9kNGOJ$/!":FMxMQ$7d9$/$9k?aK$O M}$7$FC_@Q$9k3H,I,MWHJ$k!#$3li$NMW@A$rK~$?$9$? aK$O!"%^%k%A%a%G%#%">pJs$KE,@Z$J8!:w%-!<$rIUM?7F@0 M}7F$*$/I,MW$,$"$k!#7+$7!">-Mh$N>pJs$NNLE*$JA}Bg$K BP1~$7!"$+$DFbMFKF'_9~s@8!:w$r<B8=9k$?$aKO!"8! :w%-!<r-$a:Y$+$/!"$+$D:GDc8BI,MW$JbNN_$r!"2DG=$J 8B$j?M<j$KMjk3HJ$/<+F0E*$KIUM?9kI,MW$,$"$k!#

8!:w%7%9%F%`$NJ}<0$d%$%s%?%U%'!<%9$K4X7F$O!"">-Mh$+ $i2hA|%G!<%?%Y!<%9$dEE;R?^=q4[4XO"$N2]Bj$H7F8&5f$5 lF$-$?$,!"%G!<%?%Y!<%9$N<+F0@8@.$K4X$7FO6aG/KJC $FK\3JE*$K8&5f5l;Oailkh&KJC?!#$=$Nh&$J JF9q$N CMU (Carnegie Mellon University) $G9T$olF$$$k InformediaTM%W%m%8%'%/%H$O!"2hA|FbMF$K>\:Y$KN)$AF~C? F02hA|%G!<%?%Y!<%9$N<+F0@8@.$+$i;kD0<T$Khk8!:w$^$G$r J}<0$^Gr9MN8$7$?Am9gE*$J%7%9%F%`$H7F!"@h?JE*$J0LCV $r@j$a$F$$$k!#

K\NX9VGO!"3Nh&$J Informedia %W%m%8%'%/%H$N>R2p$r DL7F!"%^%k%A%a%G%#%"%G!<%?%Y!<%9<+F0@8@.$N>-MhA|$r8! F$$9$k!#

2 Informedia %W%m%8%'%/%H

2.1 Informedia %W%m%8%'%/%H$N35MW

Informedia EE;R1GA|?^=q4[%W%m%8%'%/%HGO!"A41GA|FbMF $rLVMe$7$?CN<1%Y!<%9$K4p$E$$$?8!:w$rDs6!$9$k!"5pBg$J%* %s%i%$%sEE;R1GA|?^=q4[$r9=C[9k!#K\%7%9%F%`GO!"?^=q 4[XN%G!<%?$NEPO?$O<+F0E*$K9T$o$l!"%G%8%?%k2=$5l?1G A|, 2;@<, J8=q$N8!:w$*hS2sEz$NDs<($O!">.7?7W;;5! (PC) $+$i LAN(Local Area Network), MAN(Metropolitan Area Network), WAN (Wide Area Network) JI$r2p$7$F9T$o$l $k!#?^=q4[$K$OEv=i!"%T%C%D%P!<%0[1] $N CMU $N%F%l%S6I WQED, %U%'%"%U%!%C%/%9[2] (WNVT) $N3X9;, 1Q9q$N%*!<%W%s%f%K%P!<%7%F%# $N1GA|;q;:$+$iDs6!$r<u1? 1,000 ;~4VJ,$NJT=8A08e$N%I%-%e %a%s%?%j$*$h$S 650iMQ1GA|$r<}B"9k!#MM!9$JG/NpAX$K$*$1

$k3X=,8zN($N8~>e!"$H$$$&4QE@$+$i?^=q4[$K<}B"$7$?1 ;:$N2ACM$rI>2A$9k?aK!"CMU $HCO85$N>.3X9;$+$i $^$G$N3X9;$K?^=q4[$rDs6!$9$k!#

FbMF$K4p$E$$$?8!:w$*$h$SO"B3$7$?1GA|$NDs<($r9T$ $K!"J#?t$N5;=Q$rE}9g$7$?=hM}$r9T$&!#>pJs$O!"<+A38@ @<$dJ8;z) $H2hA|$KhC$FEAC#$5lkNG!"2hA|, 2;@<, 8@8lM}2r$N3F5;=Q$NE}9gKhCFO8aF!"B?:L$J1GA ~<J$rI|F8=N($HE,9gN($G<}=8, J,3d, :w0zIU$1, 8!:w$9$ $,$G$-$kh&KJ$k!#

3Nh&$JE}9g$Khj!"8mjr4^s@[#Kf$J%G!<%?$ $K2r<a$H8!:w$NLdBj$KBP=h9k!#$^$:!"1GA|$KIU?o$9$ $rJ8;zNs$K=q$-2<$9$?$a$K!"9b@:EY$NOC<TIT0MB8$NO"B G?<1%7%9%F%`$rMxMQ9k!#$=$N8e!"<+A38@81M}2r%7%9% J8;zNs$rJ,@O$7$F@0M}$7!"%U%k%F%-%9%H%G!<%?%Y!<%9 %9%k!#3N%F%-%9%H%G!<%?%Y!<%9Kh$j!"2;@<Cf$K4^$ CfNa$$$NB>$KIU?o$9$k<+A38@8l>pJs$K4p$E$$$F!"G$0 8;zNs$Khk8!:w$K1~$8$F1GA|$NCGJR$r9bB.$KDs<(9k$ G-kh$&$KJk!#$^$?!"2hA|$H<+A38@8l$rE}9g7FM K3HKhj!"%+%C%H, J*BN$NDI@W, OC<T$NJQ2=, 2;6A$ GA7O2,3Z$NCGB3, 2qOCFbMF$NJQ2=JI$NAH9g$;$+$i!"V1 Mn!W$rH=JL$7$FJ,3d$G$-$kh&KJ$k!#MxMQ<T$O!"%$% %U%#%V$JA`:nKh$j!"A41GA|Cf$+$i<+J,$N6=L#$K4X$ CMMn$r8!:w$7$FD/$a$?$j!"Ds<(5l$?7k2L$r!V=&$$8+$ $j!"J]B8$7$?1GA|$NCGJR$rMM!9$JJ}K!$G:FMxMQ$7$?$j$

$^$?!"$3$3$G<BAu$7$?%G!<%?$H%M%C%H%o!<%/$N9=@.$K J,;6$7$?%G!<%?$NB?%l%Y%k$N3,AX9=B$$,Ds6!5l!">&M %?%5!<%S%9>e$N%M%C%H%o!<%/$H7F$bMxMQ2DG=$G$"$k! a!$NCNE*=jM-8"$r<i$j!"%;%-%e%j%F%#$H%W%i%$%P%7$r3 K?aK!"MM!9$J%l%Y%k$G$N2]6b$d%"%/%;%9@)8B$N@_D G=$K7?%M%C%H%o!<%/2]6b%7%9%F%`$bAH$_9~$`!#

0lHL$K!"EE;R?^=q4[$O6&DL$N5;=QE*!&<R2q3XE*LdBj, FCD', 2]BjrUTs$G$$$k!#K\EE;R1GA|?^=q4[$bNc30$G$ 3m$+!"@bL@$r4^$`$h$j>e0L$N%G!<%?J7$K!"@8%G!< D>@\0UL#FbMF$r<+F0E*$KCj=P$9$k!"$H$$$C$?5;=Q$r$O 9k!"MM!9$JNN0h$N?7$?$J8&5f2]Bj$b@8$_=P7?!#?^= C[N?aK5!3#G'<15;=Q$rMQ$$$k<jK!$O!"2qOC, 2hA|, < 81M}2r$N3FNN0h$K?7$?$J@)Ls$dMW5arFM-IU1k3H$?7$?$J2r7hK!$r8+=P$9I,MW$,$"$k!#:G8e$K!"FCJL$J%f! %s%?%U%'!<%9$K4X9kLdBjE@$,!":FMxMQN?aN;k3PE A38@8lE*MWLs, =&$$8+, 1GA|%G!<%?$NCj=P$K4XoCF/

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*EDCf (1Q) 8&5f<<, ide@mtl.t.u-tokyo.ac.jp

[1] Pennsylvania =# Pittsburgh, CMU $N=j:_CO!#

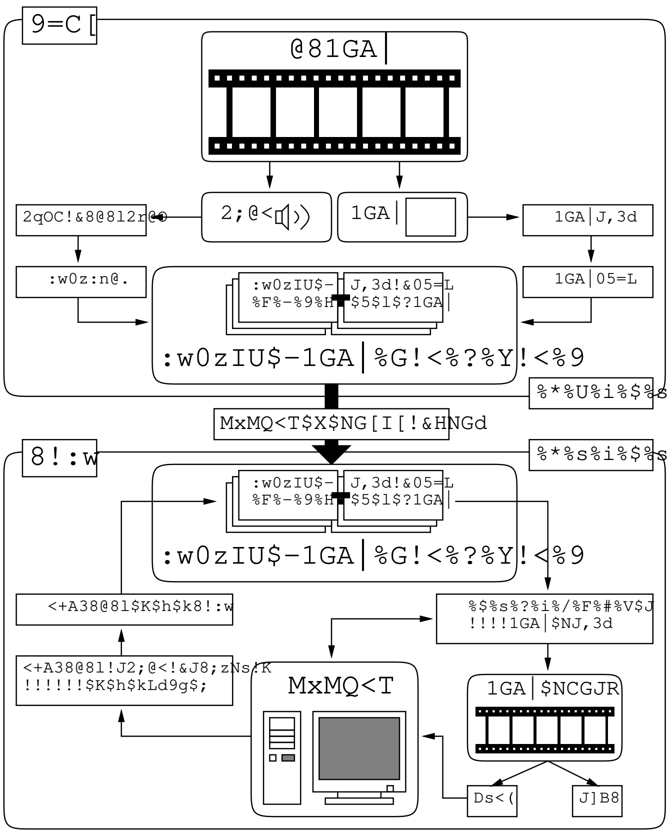
[2] Virginia =# Fairfax 74, <sET Washington D.C. $N9Y30!#

2.2 %7%9%F%`9=@.

?^ 1$K Informedia %7%9%F%`$N9=@.$r4JC1$K<($9!#=hM}$OAj;~4V$r5$$K$;$:$K9T$&%*%U%i%$%s=hM}$H!"MxMQ<T$N%$%s%?%i%/%F%#%V$JA`:n$r2DG=$K9k$?$a$K%j%"%k%?%$%`=hM}$r5$$l$k%*%s%i%$%s=hM}$H$KJ,$+$l$k!#$5$i$K%7%9%F%`$O!"

- 05=L$*$h$SJ]B8$K4X9k?7$?$JI8=`
- A`:n$*$h$SI=<($K4X9k3W?7E*$J5;=Q
- ?7$?$J9-BS0hDL?.$NI8=`$d%5!<%S%9

$NEP>l$K9go;$FJQ99$dBP1~$,$G$-$kh&$K9=C[$5lJ1lPJiJ$$!#$^$?!";nMQ<B83$r9T$&3HKh$j!"%7%9%F%`$N;H$$>!<j$d@-G=$K4X9kI>2A$r9T$$!":#8e$N2~NIHG$K?WB.$KH?1G$5$;$J1lPJiJ$$!#hC$F!"EvLL$O2DG=$J8B$j4{B8$N>&MQ%O!<%I%&%'%"$d%=%U%H%&%'%"$rMQ$$$F!"$^$:OG$-$kH3m+$i Informedia $r9=C[$9$k!#



?^ 1: Informedia %7%9%F%`$N9=@.

%7%9%F%`OBg-$/J,$1$F0J2<$N 4 DNItJ,$KJ,3d$G$-!"3FItJ,$OB>$NItJ,$K0MB8$;$:!"FHN)7F9=C[G-$k!#

- ?^=q4[$N9=C[
- %$%s%?%i%/%F%#%V$JMxMQ<TC<Kv$N@_7W
- %M%C%H%o!<%/2]6b%5!<%P$N@_7W
- %G!<%?$N@8@.$H%M%C%H%o!<%/$N9=@.

3liN3FItJ,$O4pK\E*$KB>$NItJ,$H%M%C%H%o!<%/%W%m%H%3%k$r2p$7$FDL?.$r9T$&$h$&$K@_7W9kNG!"?M9)E*$KDL?.$l@8@.9k3HKh$j!"%7%_%e%l!<%7%g%s$rMF0W$K9T$&3H$,$G$-$k!#

2.3 ?^=q4[$N9=C[

1GA|;qNA$O!"E,@Z$J:w0zIU1J$/$7$F!">pJs;q8;$HOJj($:!#Informedia ?^=q4[$N!"FbMF$K4p$E$/8!:w$r9T$&$H$$$&L\E*$r<B8=$9k?aK$O!"1GA|Cf$N0UL#N"$k>.CGJR (2 JDxEY$N!V1GA|CJMn!W) $KBP1~$7!"JL$NI=8=$dMM!9Jl%k$NCj>]EY$KhkLd9g$;$r5v9h$&$J!"<+F0@8@.5l$?:w$NIUM?$,I,MW$G$"$k!#Davis $O [9] K*$$$F!"1GA|%G!<%?$NJM}E*J,3d$Khj!"FbMF$N8GDj2=$H85NOCNN.lH$NP*N*$rb?i5lk4m81@-$,Hk$ail$F$$$k3H$r;XE&$7$F$$$3N3H,8e$N;HMQ$K1F6A$r5Z$\$9Nr$*$=l?$?$a!"3G$O?^=q4[$N%G!<%?$r1GA|CJMn%^!<%+$KhjO@M}E*$KJ,3d$F!"85NOCNN.lrJ]C?$^$^K7F*$/!#

2.3.1 2;@<G'<1

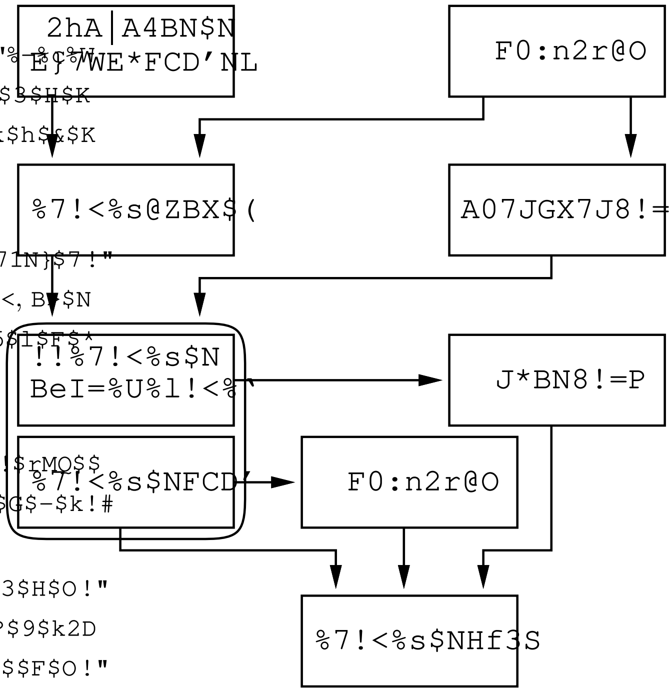
B?$/$N%F%l%SHVAH$O%/%m!<%:%I%-%c%W%7%g%s$$$k$,!"$[HsIN%S%G%*$d1G2h$KOJ5l$F$$$J$$!#5iL$JT=8$N1GA|$OJT=8$5lFJ|Aw5l$k1GA|$N 50!A100 G\$NN$,$"$j!"$3li$N1GA|$OEvA3%/%m!<%:%I%-%c%W%7%g%s5l$$$J$$!#hC$F!"$3$3$G$O%^%k%A%a%G%#%"%G!<%?$N:w0zIU$HDs<($N$?$a$K!"5vMFHO0OFb$N8mjr4^$`2;@<G'<1$KhjF0@8@.5l$?=q$-2<$7J8$H!"MxMQG-kH$-$K$O%/%m!<%:%-%c%W%7%g%s$rJ;MQ9k!#

L5@)8B8lWC!&OC<TIT0MB8$NO"B32;@<G'<1$OL$40@.$N5;=Q$"$k!#7+7J$,$i!":G6aNJ,Lnr8BC?<jK!$r8+$k8B$j!MhE*$K$O8lWC$K@)8BJ/2qOC$r<+F0E*$K=q$-2<$;$k2DG=@-M=46$,46$8$ilk!#8=:_!"60,000 8l0J>e$N8lWC$rbD CMU$N Sphinx-II %7%9%F%`$G$O!"%Y%s%A%^!<%/I>2A$G 90%$N@:EY$GOC<TIT0MB8$NO"B32;@<G'<1$K@.8y7F$$$k!#=q$-2<$7$N8m$j$dIT0BDj@-$K$O0J2<$K5s2kh&$J$$$/D+$N860x$"$j!"$3li$r2r7h$7J1lPJi$J$$!#

- 2;3Z$d;(2;$N:.F~
  FFT <~GH?tJ,@OKh$j!"?M@<$N<~GH?tBS0hhj9b0hIt$8!=P$G$-$k!#%K%e!<%i%k%M%C%H%o!<%/$rMQ$$$?;(2;=|$bM-K>$G$"$k!#
- D9$$$CGJR$NJ,3d
  H/OC$N3+;O$H=*N;$O%^!<%/$5lF$$$J$$$N$G!"2;@<$N%M%k%.!<$rMxMQ$7$?%"%k%4%j%:%`$Khj!"H/OC$rJ,N%$J1lPJiJ$$!#
- ITE,@Z$J8@8l%b%G%k
  G'<1798~$K4p$E$$$FG=F0E*$KJQ2=$9kh$&$J!"E,1~@-$"$k8@8l%b%G%k$r:NMQ$9kI,MW,$"$k!#BjL>, IUB0$9$J8=q, %3%a%s%HJI$+$i$N>pJs$,!"E,@Z$J%b%G%k$rA*B9k:]$KLrN)$D>l9gb"$k!#

closed-caption: JF9qGO$*$b$KD03P>c32<T$N$?$a$K!"$[HsIN TV HVAHKBP7$F!"2;@<Cf$N8@MU$rJ|Aw6IB&$G?M4V$,J8;zNs$K=q$-2<$7$FJ|A$F$$$k!#;kD0<T$O%F%l%S$KFC<l$J%"%@%W%?$rIU1lP=lr2hLL$KI=<($%$%I%<$-$k!#%K%e!<%9HVAH$J$I@8J|AwHVAH$KBP7F$b9T$o$l!"<c43$NC$*$hS+Jj$NIQEY$G%_%9%?%$%W$,$"$kbN$N!"<BMQ>e$O==J,G"$k!#

- 8mjr4^$`%/%m!<%:%I%-%c%W%7%g%s$HBfK\ 8@8l%b%G%k$NJQ99$H6&$K6/@)E*$JB0@-$r;HMQ$7!"%-%c%W %7%g%s$dBfK\$K4^$^$l$J$$2;@<$r9MN8$K$$$l$k$3$H$K $h$j!"$8$+$K=q$-2<$9:]$N8m$j$r7`E*$K8:i;kh$&$K Jk!#
- 2;6A%b%G%k ;(2;$H2;3Z$r<h$j07$&$?$aKO!"?7$?$J%b%G%k$r7IN}$7!" 7+$bG'<1$rJL!9$K9T$&I,MW$,$"$k!#;(2;,>P$$@<,B$$N L@NF$J2;6AE*;v>]$KFC2=7?2;6A%Q!<%6$,3+H/$5lF$* $j!"$3li$N8!=P$dCj=P$r9T$($k!#
- OC<T8rBe$N8!=P %K%e!<%i%k%M%C%H%o!<%/$d2;$N9b5KCmL\$7$?<jK!$rMQ$$ k3HKhj!"OC<T$N@-JL$NJQ2=$N8!=P$OMF0WKG$-$k!#
- %-!<%o!<%I Cj=PN?aN2;@<G'<1 %-!<%o!<%I Cj=PN?aN8@8l%b%G%k$KCmL\$9k3HO!" Ld9g$;$KBP9k2sEz$NA4BNE*$J@:EY$N8~>e$K4sM?9k2D G=@-$,$"$k!#$7$+$7J,$i!"?^=q4[$N8!:wK*$$$F$O!" =q$-2<$7J8$N40`z5O!"?M4V$H5!3#$N4V$N2qOC$r9T$&>l 9g$[IO=EMWGJ$$$+b7lJ$$!#



?^ 2: 2hA|=hM}$NN.$l

EE;R1GA|$KH<$&2;@<$N=q$-2<7N>l9g!"=hM};~4V$r5>@7$K 7F@53N5r5aak3H$,$G$-$k!#%7%9%F%`$O40A4$K%j%"%k %?%$%`$GF0:n$9kI,MWO$J$$$N$G!"@d$($:3HD%$7B3$1$k<=q $d!"$h$j6/NO$J7W;;NO$rMW5a$9$k8@8l%b%G%k$d8!:w%"%k%4%j %:%`$rMxMQ$G$-$k!#

2.3.2 2hA|=hM}

2hA|M}2r$O!"%G%8%?%k2=$7$?1GA|$r@0M},8!:w,:FMxMQ9k $?$a$K!"Informedia K*$$$F=EMW$J0LCV$r@jaF$$$k!#EE;R 1GA|?^=q4[$,40@.$7$?6G$KBh0l$KMW5a$5lk5!G=$O!"1GA|$r %U%l!<%`72$KJ,3d ($"$k$$$OCJMnJ,$1) 9k3HG"$k!#$3 $N=hM}$N0lItKO!"?'J,I[, DCT (N%;6%3%5%$%sJQ49) 78?t, 7A>u, %F%/%9%A%cNh$&$K!"FbMF$K0MB8$7$J$$2hA|E*E}7WNL $rMQ$$$k3HbG$-$k!#L@E>!&0EE>, %G%#%>%k%V$J IN%7!<%s$NJQ2=$b<+F0E*$KG'<1G-$k!#0lHL$KLd9g$;$O6q BNE*$J;vJ* (2hA|$H<+A38@8l$NAPJ}$NFbMF$+iJ$k) Kh$k $H9M$(ilk,!"8e$KB3$/9J$j9~$_$N2aDx$G$OLd9g$;$,!"V$3 lH;w$?7J?'!W$H$+!V$3lH;w$?7zJ*!W$H$$$C$?2hA|E*$J$b NKJk3Hb"$jF@$k!#

1GA|>pJs$O;~4V$H6u4V$K0MB8$7!"0lHL$KHs9=B$E*G"$j,KD Bg$G$"$k!#7k2LH7$F!"40A4$J2rEz$rF@$k3H - 0UL#>pJs$N <+F0Cj=P$dHFMQE*$J1GA|G'<1%7%9%F%`$N<B8= - $O8=CJ3,$G$O IT2DG=$G$"$k!#$3$3$G$O!"J,3d, J*BN8!=P, FCD'IU$1, N`;w@- $NI>2A$H$$$C$?Aj8_$K4X78$79g$&2]Bj$KCmL\$9$k!#?^ 2$K! Informedia $N%7%9%F%`Cf$G<B9T5l!"FbMF$K0MB8$9$k>l9g$H 7J$$>l9gNIAiK*$$$F$b!"J,3d$H8!:wN?aKE,@Z$J %G!<%?$NFCD'IU1r9T$&MM!9$J2hA|=hM}2r@O$r<($9!#3l$i $K4X$9$k5;=QE*LdBj$H$=$NBP:v$r0J2<$K$^$Hak!#

- J,3d$H:w0zIU$1N?aN2hA|E*E}7WNL Bg;(GD$JJ,3d$O!"FbMF$K0MB8$7$J$$2hA|$NE}7WE*FC $N5^7c$JJQ2=$r8!=P$9k3HKhj<B8=G-$k!#C ?'J,I[$NJQ2=$r4p=`$K$9$k$@$1$G$b!"=<J,<BMQ$KE @53N$J%7!<%s$N@ZBX$($r8!=P$G$-$k!#$^$:!"1GA|$ %/%9%A%c,?',7A$H$$$C$?2hA|E*FCD'NL$rCj=P$9$k!# $$$O!"2hA|FbMF$H$$$&4QE@$+$i$9$k$H!V4V@\E*!W$ NL$G$"$k$,!"2hA|$r9bB.$KHf3S!&J,N`$9kNKO$ M-8zG"k3H,H=L@7F$$$kNG!"3liNFCD $r:w$KMxMQ9k!#
- 2hA|>pJs$H2;@<!&8@8l>pJs$rE}9g7?MxMQ 2hA|E*FCD'$K2C$(!"OC<T$N8rBe,GX7J2;3Z$NCGB3,2 MF$NJQ2=$J$I!"B>$N<j3]$+$j$bJ,3d$KM-8z$K3hMQ$G
- 2<!85>e$N%+%a%i$HJ*BN$NF0$- Hs>e$KM-8z$J;k3PE*J,3dH7$F!"%:!<%`$dAQ$5 $H$$$C$?%+%a%i$N3j$i$+$JF0$-$N!"7W;;5!$K$h$k2 DI@W$K4p$E$/$b$N$,$"$k!#Lucas $H6b=P$K$h$k%*%W %J%k%U%m!<$N8{G[9_2<K! [10] $rMxMQ$9$k$3$H$K$h$j $l!<%`4V$G8D!9$NNN0h$rDI@W$7!"%+%a%i$NF0$-$KB $7%Y%/%H%k$rF@k3H,G-$k!#$^$?!"%+%a%i$NF OJLK!"CmL\$7$F$$$k;vJ*$NF0$-KhCF1GA|$rJ K}$K!b"$k!#;vJ*$NF0$-Kh$k%U%m!<$O!"1GA|$N $NNN0h$K=8Cf9k798~$,$"k,!"%+%a%i$NF0$-K %m!<$O2hA|A4BN$KJ,I[9k!#

---

[4] 2hLL$N0EE>$K%*!<%P!<%i%C%W7F<!$N2hLL$,8=ol$k>lLLE>49K!!#

[5] $#%a%i$r:81&$K2sE>$7$F<L$9A`:n!#

;vJ*$NB8:_

FCDj$N;vJ*$dJ#?t$N;vJ*$NAH9g$;$,2hLL$K8=$lkH1GA|$l J,3d$9$k!"$H$$$&6/NO$J<jK!$,$"$k!#?M4V$,A`:n$9$k$3$H$r A0Ds$K$7$F$$$k$N$G!"?M4V$N8!=P$OHs>o$K=EMW$G$+$DB8:_$ =P$5$l$k;vJ*$H$7$F$O0lHLE*$G$"$k!#$3$3$GMQ$$$F$$$k?M4V $N4i$N8!=P%7%9%F%`$O!"%K%e!<%i%k%M%C%H%o!<%/$rMxMQ$7$? <jK!$K4p$E$$$F$$$k!#8=;~E@GO!"70 2hA|$K4^$^lk 300 0J >e$N4i$N$&$A 90% 0J>e$r8!=P$7!"60 $N8m$C$?8!=P$r9T$&$H$$ $&@-G=$G$"$k!#

JL$N=EMW$J8!=P5;=QH7$F!"2;@<$K$O8=$l$:1GA|$N$_$K8= lkJ8;z>pJs$N8!=P$,$"$k!#L)=8$7$FL@NF$KI=<($5lk!"$H $$$&J8;z$NFCD'$rMxMQ9k3HKh$j!"2hA|Cf$NJ8;z$r4^$ NN0h$rCj=P$9k3H,G-$k!#8=;~E@$G$O!"75 2hA|$N$&$A!" J8;z$r4^$`NN0h$N 86% $r8!=P$G$-!"8m$j$O 12 $K2a$.$J$$!#$R H?$SJ8;z$,Cj=P5llP!"8w3XE*J8;zFI<h (OCR) $N5;=Q $rMQ$$$F!"%F%-%9%H%G!<%?%Y!<%9$KDI2C$G$-$k!#

3 <!85K*1k;vJ*$H%7!<%s

DL>o!"1GA|O*bK 3 <!85$N7A$dF0$-$rI=8=7F$$$kNG!" 2hA|M}2rN?aN2r@O$K 3 <!85M}2rG=NO$rIU2C9l$P!"%7%9 %F%`$NG=NO$r3HD%$G$-$k!#3N:]!"2 <!851GA|$+$i 3 <!85>p Js$r:F9=C[$9$k5;=Q$rMQ$$$k3H$,9M$(il$k!#

2.3.3 <+A38@8l=hM}

MxMQ<T$NLd9g$;$r3HD%$7!"FbMFE*KO@5$7$$$,Ld9g$;$HD> @\0lCW7J$$?^=q4[$NFbMF$HBP1~IU1k$?$a$K!"<+A38@8l=h M}$Khj!"?^=q4[$N8!:w, 7k2L$NDs<(, 9J$j9~$_, 4~5Q$NG=NO$r 8~>e5;$k!#$3lh$j!"8BDj$5l?%-!<%o!<%IHN0lCW$r8+$K $@$1$NC1=c$J8!:whj$b9bEY$J8!:w$,2DG=$KJk!#Informedia GO!"Ld9g$;=hM}$H?^=q4[$N9=C[$KBP7F<+A38@8l=hM}5;=Q $$$F$$$k!#3lKO0J2<$N 4 DNL\E*$,$"$k!#

- <+M3$J7A<0 (2;@<, J8;z) GNLd9g$;$NMFG'
- 8!:w7k2L$NM%@h=g0LIU$1
- <+F0=q$-2<$7J8$N=$@5
- %?%$%H%k@8@.$H1GA|MWLs (Nc<($d=&$$$8+N?$a) @8@.$N $?$a$NFbMF$NMWLs

8!:w%(%s%8%s$O!"Lycos[6] $rMQ$$$F$$$k Pursuit %(%s%8%s$K 4p$E$$$F$$$k!#3lKO!"8!:w7k2L$K=g0LIU$1$r9T$&3NN(E* %^%C%A%s%0$r<BAu$7$F$$$k!#MxMQ<T$O!"35G04V$N4XO"@-$Nog CM$rJQ$($k3HKh$j!"E,9gN($+:F8=N(NIAi$+$rD4@0$9 k3H,G-$k!#

3lir<B8=9k$?$a$K!"0J2<$N;v9`$, Informedia $N<+A3 8@8l=hM}$KMW5a5l$k!#

- J#?t$NN`;wEY%^%C%A%s%0$NA*Br;h$rMQ0U @\F,<-, N`5A8l, J8;zNs, 2;@<, 35G0JI!"?t<oN`$NN`;w EY$N<BAu$HMxMQ<TKh$kD4@02DG=@-

[6] WWW 8!:w%(%s%8%s!#http://www.lycos.com/

- Ld9g$;$N2;@<G'<1K*1k8mjN5vMF
- 2;@<G'<1Kh$jF@$il?=q$-2<$7J8Cf$N8m$j$ND{@5
- H$D*$GJ8K!E*$K@5$7$/$J$$8}8l$N=hM}
- Ld9g$;$H=q$-2<$7$NAPJ}$X$N2;@<E*$J%^%C%A%s%0
- 8}8lKBP9$k%G!<%?Cj=P5;=Q$NE,MQ
- 9-HO$JNN0h$Ko?$k0UL#E*%^%C%A%s%0

2.4 ?^=q4[$N8!:w

?^=q4[$N8!:w$K4XO"9k=hM}H7$F!"8!:w, 7k2L$NDs<(, MxMQ$,$"$k!#$3lihj!"%f!<%6%$%s%?%U%'!<%9$NA*Br; %G!<%?$*$h$S%M%C%H%o!<%/9=@., FbMF$K1~8?2]6b5!9=$J $,J#;($KJk!#

2.4.1 E}9g=hM}Kh$k1GA|$N!V=&$$8+!W

0lHL$K!">pJs8!:w%7%9%F%`$NMxMQ<T$O!"8!:w7k2L$,<+J, 0U?^K+JC$F$$$k$+$I$&$+$rD4$Yk?aK!"7k2L$rBg; $KD/$a$?$$$H;W$&$bNG$"$k!#%F%-%9%H$N>l9g$O!"@EE*$J 2L$,Ds<(5l!"MxMQ<T$O<+J,$NbD5;=Q$GFbMF$r=&$$FI$_ $k!#0lJ}!"1GA|$H2;@<$rC1=c$K9bB.2= (2 G\B.0J>e) 7F$h 1GA|$OG'<1ITG=J[IOD_!"2;@<$OD0<hIT2DG=$KJCF7 $&!#$5iK!"0lDj4V3V$G%U%l!<%`$rHt$P$7$FI=<($9$k$H!" MW$JFbMF$r8+F($7$F$7$^$&4m81@-$,$"$k!#7k6I!"1GA|CGJ FbMF$N=EMW$JItJ,$N$_$rI8=`$NB.EY$GDs<($9k3H,!"I, $?5;=Q$HJk!#

$3$3GO!"<+A38@8l$H2hA|$NM}2r$rE}9g$9k3HKh GON$N05=LN($N1GA|$N!"=&$$FI$_$JiL!V=&$$8+!W$r@8@. k3HK@.8y7?!#$3$3$N05=L1GA|$O!"851GA|$NFbMF$NMWLs @8@.9k$?aK!"FCD'E*$J1GA|$H2;@<$+iJ$j!"3F%7!<%s BeI=9k%U%l!<%`$rCj=P$9$k$H$-$K$b;H$($k!#$3$3$N$h$&$J %l!<%`$r%"%$%3%s2=7?$bNO!"1GA|CGJR$r 1 Kg$N2hA|$N $GBeI=$9lP$h$$$h$&$JH-$KM-8z$G$"$k!#

1GA|$rJ,3d$7$?$i!"<!$O3F%7!<%s$N1GA|FbMF$NAjBPE*$J MWEY$rE}7WE*$K7W;;9k!#2hA|$O!"%+%a%i$NF0$-$d!"FCD ;vJ*$NB8:_$KhjFCD'IU1ilk!#%*%W%F%#%+%k%U%m!<2r 7F$$$F!"%7!<%sCfNI$N2hA|$,bCHbCmL\$9Y-F0$- 7F$$$k$+$rH=JL9k!#$?$H$($P!";#1F4FFD$,DL>o!"%+%a $NF0$-$NA08e$K@E;_%U%l!<%`$rF~$l$F!"$=$N%U%l!<%`$rCm 5;k3HbMxMQG-$k!#$^$?!"1GA|Cf$+$i?M4V$N4i$d%F %9%H$JIN;vJ*$r8!=P$9k3HKhj!"=&$$8+$r@8@.$9$k $NFCD'NL$H7F;H$&$3HbG-$k!#%$%s%?%S%e!<$d%K%e!< Gh$/8+$ilk!VOC$9F,It!W$N2hA|$O!"FCDj$N?MJ*$KCmL\ $?1GA|:n@.$NE57?$H8@$($k!#

<!$K!"F14|$5lF$$$J$$2;@<$H1GA|$,E}9g5l$F=&$$8+ Jk!#%-!<%o!<%I$OI,$:7b3:Ev9k%U%l!<%`$@$1$H0lCW $:!"%-!<%o!<%I$ND9$5$K1~$8$F!"2;@<$,J#?t$N%U%l!<%`$r $0$3Hb$"$k!#$?$H$($P!"V62N5 (dinosaurs)!W$H$$$&8@MU$G 1.13 IC (34 %U%l!<%`J,$KAjEv) rMW9k?$a!"<~0O$N%U%l!< HbF1;~$KBP1~IU$1ilF7$^$&!#0lHL$K!"?M4V$N4i$,1G$

$$$k%7!<%s$O=EMW$G$"$k$,!"J8;z$,I=<(5l$F$$$k>10gOh%s%?%S%e!<
$j=EMW$G$"$k!#%Q%s$d%:!<%`$H$$$C$?%+%a%iA`:n$r4^$`%7!<
%sKD$$$F$O!"%+%a%i$NF0$-$NA08e$N%7%g%C%H$rJkY/;H
MQ9k!#J*!":G=*E*$JI=8=$OMxMQ<T$N:[NL$KG$$5lF$*$j!"
D9$5$dFbMF$OMM!9$G$"$k!#<B83Kh$j!"=&$$8+$O 1/6!A1/20
G\$K05=L9kN,$h$$$3H,J,$+$C$?!#I= 1$KMM!9$J1GA|$K4X
9k=&$$8+$N;~4V$rHf3S7?bN$r<($9!#FCD'E*$J2hA|NN0h

1GA|$N<oN`	851GA|(IC)	=&$$8+(IC)	05=LN(
K'nex toy	61.00	7.13	0.12
<o$NGK2u (H>J,)	68.65	6.40	0.09
*<o$NGK2u (A4It)	123.23	12.43	0.10
*1'ChBg3X	166.20	28.13	0.17
*1+NS	107.13	5.36	0.05
*%Z%k!<$N?9NSGK2u	58.13	5.30	0.09
*3$D1C58!	119.50	5.67	0.05

I= 1: <o!9$N1GA|$Khk=&$$8+05=L$NHf3S (*!D?M<j$Khk)

NJLJI=8=K!$K!"@EE*=&$$8+$,$"$k!#MxMQ<T$O!"0[Jk%7!<%s
$+$iA*Pl$?%U%l!<%`%"%$%3%s$N=89gI=<($r8+k3HKhj!"
M?$($il?CGJR$NFbMF$rB(:B$KM}2r$G$-$k!#3NJ}<0$NH/E8
7AH7$F!"A*$Pl?%-!<%o!<%I$dJ8@a$N=89g$r2hA|$U%l!<%`
$H6&$KI=<(9kJ}K!b"$k!#

2.4.2 K-$+$J%f!<%6%$%s%?%U%'!<%9

1GA|?^=q4[N?aN%f!<%6%$%s%?%U%'!<%9$KMW5a5lkb
NO!"%G!<%?$N;~4VE*FC@-$N$?$a!"%F%-%9%H$d2hA|$N?^=q4[$K
BP9kbNHCx7$/0[$J$k!#$h$$EE;R1GA|?^=q4[%$%s%?%U%'!<
%9KO$$$/D+$N5!G=$,IT2D7gG"kH9M$($i$l!"$=li$K
4X7F0J2<$G8!F$$9$k!#Informedia $N;n9T%7%9%F%`$G$O!"B>
$NDs<(K!$dMxMQ<TKhCFD4@02DG=$JJQ?t$N;HMQKBP9$kAj
BPE*$JM-8z@-$JIrI>2A9k!#

JBNsDs<(

8!:w7k2L$,B??t$"kH$-!"%7%9%F%`$O$=$lirF1;~KJBY?
%3%s,CNE*F02h%"%$%3%s (Intelligent Moving Icon = imicon),
J8;zNsKh$kMWLs$rH<C?1GA|H7$FDs<($9$k!#1GA|$H3S$1
$F!"@E;_2hA|$,JBs@2hLLGOMxMQ<T$O0[$J$kH?1~$r<($92D
G=@-$,$"kN$G!"$3$3$G$OE,@Z$JI=<(?t$dI=<(K!$NAH9g$;$K
4X7F8!F$$9$k!#

MWLsD9$N@)8f

MxMQ<T$O!"7k2L$H7FDs<(5l$k1GA|!&2;@<$N!VD9$5!W$r@)
B3;~4V) $rD4@0$G$-$k!#$3$3$G!"VD9$5!W$H$$$&NO!"%Q%3%9$N8!:w$,9T$($k!#MxMQ<T$O7k2L$H7FDs<(5
4VG"kH8@$&$3HbG-k,!"%7!<%s?t$d>pJs$NJ4;$N5$$
C10LH9k3HbG-$k!#$^$?!"MxMQ<T$O!"Ds<(5l$?C1GA|
KBP7$F!"85$N1GA|A4BN$dA08e$N1GA|CJMn$rDI2C$7$F!"5+MF
rU$/$i$^$;k3HbG-$k!#

FCDj$N8D?M$KBP9k%$%s%?%S%e!<$d%K%e!<%9F$O@$N7
==J,$J%G!<%?$,?^=q4[$K<}B"$5lF$$$l$P!"2>A[E*$J
%S%e!<$N%$%s%?%U%'!<%9$r9=C[$9k3H,G-$k!#$3$
$J5!G=$r<B8=9k3HKh$j!"B>?M$Khk%$%s%?%S%e!
$@D/$a$F$$$khj$b!"MZ$+$K6=L#?<$$8D?ME*7P83$rBN8
$k!#Hf3S$7F@$k9g@.%$%s%?%S%e!<%7%9%F%`$,B8:_$9$k
$=$lirHf3SBP>]H7$FI>2A$9$k!#

:FMxMQ

RH$?$SMxMQ<T$,=jK>$N1GA|$r8+$D1?$i!"<!$O8!:
F@il$?1GA|$r2C9)7?$j:FG[CV$7$?$j$H$$$&Lq2p$J:
9ToJ$/$FOJiJ$$!#JT=8$=$NbN$b:$Fq$J:n6H$G
1GA|;q;:$rM-8z$K:FMxMQ9k$?$aKO!"MxMQ<T$O%F%-%
A|, 1GA|, 2;@<$r?7$?$JAOB$E*$JJ}K!$GAH$_9g$o$;$kI,M
$k!#$=3G!"$3$3GO OLE Nh$&$JI8=`E*$J%$%s%?%U%
$K<+$i$H6&$K!">&MQ$N1GA|JT=8%7%9%F%`$rMxMQ9k3
Dj7F$$$k!#3l$O!"Informedia Kh$j@):n$5l?1GA|
$r>&MQ%"%W%j%1!<%7%g%s$GMxMQG-kh$&$K9k$?$a$
%7!<%s$N8r:x, 9=?^, %+%a%i%"%s%0%k, %7!<%s$NJQA+$H$
3HK,$6$9!"1GA|@):n$NJ#;($5$H$$$&@-<AKh$j!"1
M-8z$J:FMxMQ$OK8$2$ilF$$$k!#$3$3GO!"J8=q:n@.%
%`K*1k%F%s%W%l!<%H5!G=$H$$$&M%l?5!G=KIE($
$&$J!"1GA|@):n$K4X$9$kCN<1$rJd=u9k%D!<%k$r;n:n$

2.5 Informedia %7%9%F%`N^Ha

K\%7%9%F%`$r 2 <oN`$N>pJs8;$K$D$$$F<BAu7FI>2A$
$?!#1 $DL\$O!"CO85$N9b9;$K!"=q$-2<$7J8$HJ,3d$K=$@
7?2J3XHVAH$rDs6!$7!"2 $DL\$O!"ItJ,E*$K%/%m!<%:%
%W%7%g%s$r4^$_!"$=$NFbMF$r<+F0E*$K=hM}7F%G!<%?
7?%K%e!<%9HVAH$r<}B"$7$?!#8e<T$K4X7F$O!"<+A3
8}F,Kh$kLd9g$;%$%s%?%U%'!<%9$r<BAu7?!#:#8e$N2
7F$O!"=hM}$N@:EY$H@-G=$r8~>e5;k3Hd WWW
GN%"%/%;%9J}K!JI$H6&$K!"B>$NEE;R1GA|;q8;$H$N
KD$$$F$b8!F$$9$k!#

3 Informedia $NMQNc: News-on-Demand

A0>O$N:G8e$K5-7?h&$K!"%K%e!<%9HVAH$r<}B"7
1GA|?^=q4[$r9=C[$7!"News-on-Demand %7%9%F%`$HL>IU$1
K\%7%9%F%`$OJ|Aw$5l?1GA|$H2;@<$r!"%F%-%9%H>pJs$K
0zIU1r9T$$!"8!:w9k$H$$$&bNG"$k!#News-on-Dem
$O40A4$K<+F02=5l$?%7%9%F%`$G!"%F%l%S, %i%8%*, ?
$N%K%e!<%9$rK5<u$7!"8}F,$KhkLd9g$;$KBP7F3:E
%F%-%9%H$r9=C[$9$k!#MxMQ<T$O7k2LH7$FDs<($5$
4%$%s%?%U%'!<%9$+$iL\E*$K$+$J$&$bNrA*$S!"$=lr:F@8$9$k$
1G$-$k!#K\%7%9%F%`$O Pentium Ek:\$N PC >e$G MPEG-I F0
A|!"5+MF$rMQ$$$F<BAu5l$F$$$k!#J*!"2;@<G'<1$O!"Sph
O"B32;@<G'<1%7%9%F%`Kh$j9T$olF$$$k!#

3.1 News-on-Demand $N35MW

Informedia EE;R1GA|?^=q4[$NM-K>$JE,MQNcH7$F!"%F%l%S,
%i%8%*, ?7J9JI$N%K%e!<%9$N:w0zIU1H8!:w$,5s$2il$k!#
8=;~E@GO!"%F%l%S$d%i%8%*$N%K%e!<%9$OFCDj$N;~4V$KO|Aw
5l!";kD0<T$,$=$N;~4V$K%F%l%S$d%i%8%*$NA0$K$$$J1l$P!"
J|Aw5l$?>pJs$O;v<B>e%"%/%;%9IT2DG=KJCF7^$&!#$^
H(%S%G%*$KO?2h$7$?$H7F$b!"6=L#$,$"$k>pJs$rF@$k$?$a
$K!"A0$NF|$N%K%e!<%9$r8+$FC5$7$?$j9k;~4VOJ$$$@m&!#

3Nh&$J=>Mh$N%a%G%#%"GO!";kD0<T$,!"$I$NOCBj$O$H
P7Fb$h$$$H$+!"$I$NOCBj$Ohj?<$/CN$j$?$$$H$+$rA*Br
9kM>COOJ$/!"%K%e!<%9HVAH$N:G=i$+$i:G8e$^$G;kD0$9$k
I,MW$,$"C?!#$^$?!"F1;~$KJ|Aw$5lF$$$kB>$N%A%c%s%M%k
$N%K%e!<%9HVAH$NCf$N4XO"$7$?OCBj$r;kD0$9$k3HbG$-$J
$+$C$?!#$3lKBP7F!"?7J9$dJ|Aw$5lkJ8;z>pJsJI$OKD
BgJNL,F1;~F~<j2DG=$@$,!"1GA|$d2;@<$KI$E($9$k>pJsNL$O
F@il$J$$!#

LdBjE@$N2r7hK!

3liNLdBjE@KBP7$F Informedia News-on-Demand %7%9
%F%`$O!"7W;;5!>e$KEE;R2=7F05=L7?%K%e!<%9HVAH$r<}MF
9k3H$G2r7h$rO+$k!#2;@<$r=q$-2<$7$?J8$r1GA|!&2;@<
$N3:EvItJ,$K%j%s%/$rD%$k3HKh$j:w0zIU$1$r9T$&!#$^$?!"
MxMQ<T$NJX59$rO+k?aK!"$"$ifk%K%e!<%9>pJs$,%$%s
%?%i%/%F%#%V$JLd9g$;Kh$j%"%/%;%92DG=$KJj!"3N5!G=
Kh$j!"4XO"$9$kOCBj$,$"$ifk>pJs8;$+$i8!:w2DG=HJ$k!#

0lHLKh$/9T$olk2r7hK!H7FO!":w0z%G!<%?$rJ8;z>p
Js$K8BDj$9$kJ}K!$,$"$k!#$?$H$($P!"4{B8$NB?$/$N%K%e!<%9
%G!<%?%Y!<%9$O%K%e!<%9$NOCBj$K4X$9$kJ8;z>pJs$r<}B"$7!"
7k2LH7$FDs<($9k@1G$"$k!#$?$H$(!"J|Aw$5l?%K%e!<
%9$,:w0zIU$1$5$l$?$H7F$b!"Ld9g$;$KBP1~$9$k1GA|$NCf$N
FCDj$N0lItJ,$GOJ$/!"$=$NOCBj$N=q$-2<$7J8$,Ds<($5lk
3H$,B?$$!#0lJ}!"VOD(Video-on-Demand) GO!"MxMQ<T$,
HVAHA4BN$rA*Br$7 ($+$DNA6b$r;YJ'$$)!"ItJ,E*$KA*Br$7$?8!
:w$O9T$($J$$!#News-on-Demand $N<jK!$KbCHb6a$$$N$O!"
CNN $H Intel $NO"7H$KhjM-NA$GDs6!$5lF$$$k!"CNN-
AT-WORK" %7%9%F%`G"$k!#CNN-AT-WORK GO!"1GA|$r
EE;R2=7F$+$i INDEO %U%)!<%^%C%H$G05=L$7!"LAN $KO|Aw
7F WS XHG[?.7F$$$k!#MxMQ<T$O!"8+=P$7$r1GA|$H6&$K
J]B8$7!"8e$[$IMxMQ$9k3H,G-$k!#$7$+$7J,$i!"$3$N
%5!<%S%9GO!V8+=P$7!W>pJs$N$_$rMxMQ7F$*$j!"B>$N>pJs
8;$OMxMQ$7$F$$$J$$!#5i$K!"CNN-AT-WORK $O!"E|3:8+=P
1?MM!9$JJ}<0$G$NLd9g$;%$%s%?%U%'!<%9$r%5%]!<%H7F$$
$J$$!#

Informedia News-on-Demand K*1k=hM}KO!"2 DNFC
5-9Y$-ItJ,$,$"$k!#$^$:!"?^=q4[$N9=C[$K$O!">pJs$NDs<(
=q$-2<$7, J,3d, :w0zIU1H$$$C$?:n6H$,4^$^$l$k!#$E$$$F
:wKO!"%G!<%?%Y!<%9Cf$NMM!9$JA*Br;h$r9J$j9~$`$?aNMxMQ
%9%F%`$HMxMQ<T$H$N%$%s%?%i%/%7%g%s$,Mm$sG/$k!#

3.2 %G!<%?%Y!<%9$N9=C[

News-on-Demand $O!"Informedia EE;R?^=q4[$N?w7?%7%9%F
%!NRHDG"k,!"B>$N?w7?$,650iMQ$rL\E*$H7?;n9T
$"$kNKBP$7!"News-on-Demand $O!":w0zIU$1$5$l$?EE;R1G
A|?^=q4[$N@8@.$r40A4$K<+F02=$9$k9bB.$J<jK!$N3+H/$,<g
E*G"$k!#650iMQ$N?w7?GO!"7W;;5!$K;Y1g$5lF$?M<j$G
=8$r9T$&;~4V$,$"k,!"J|Aw5l$k%K%e!<%9$H$$$&!"<wL?$,
$$>pJs$N@-<A$Khj!"40A4$K<+F02=$5l?=hM}$,I,MW$K$J
6qBNE*KO!"0J2<$N<j=g$Khj5-;v$dHVAH$,=hM}5l$k

1. 1GA|$r%G%8%?%k2=
2. ;~4V<4$HBP1~$7$?=q$-2<$7J8$r@8@. (%/%m!<%:%I%-%c%
%7%g%s$d2;@<G'<1$Khk)
3. OCBj$N@Z$lL\$rJ,3d
4. %7!<%s$N@Z$lL\$d=EMW$J%U%l!<%`$NJ,3d
5. OCBjKBP9$k:w0zIU$1
6. MxMQ<T$X:w0z$rG[?.

3.3 8&5f2]Bj

8&5f2]BjOBg-$/J,$1$F0J2<$N 5 J,LnKo$?$k!#

1. %G!<%?G[?.
2. %f!<%6%$%s%?%U%'!<%9
3. 2hA|M}2r
4. <+A38@8l=hM}
5. 2;@<G'<1

1., 3., 4., 5. $O!"%*%U%i%$%sGN?^=q4[@8@.$K4XO"$9$k!#0
J}!"%*%s%i%$%s$Khk?^=q4[8!:wKO!"2., Ld9g$;$N=hM}$N
aK 4., 8}F,Kh$kLd9g$;$NG'<1$N$?$a$K 5.$,4XO"9k!#

%G!<%?G[?.

%G!<%?G[?.KO!"J]B8$HE>Aw$NLdBj$,$"$k!#KhF|J|Aw$5$l
$k%K%e!<%9$+$i<}=8$7$?!"MPEG-I J}<0$G05=L5l$?1GA|%G!
%?$rJ]B8$9kN$KMW5a$5lkLdBjrINh$&$K=hM}9l$P
$h$$$m$&$+!#1;~4VJ,$N1GA|$@1G$b 600MByte $N%G%#%9%/
MFNLrI,MWH9k!#:G?7>pJsH7$FDs6!$9$k:w0z$N$?$a$K
b@1N%G!<%?$,I,MW$G$"$k$+!"8E$$%G!<%?$r$$$D!VK:l
k+N+!"$r8!F$$7J1lPJi$J$$!#b7K:lFbh$$
J$$$C$?$H7?$i!"$=$N1GA|$N 1 IC$"$?jN%U%l!<%`?t
8:i7$?$j!"2rA|EYrMnH7?j7$F!"IJ<A$rMnH9$3$H
29G=G"$k!#$5iK!"1GA|$=$NbN$r40A4$K>C5n7F7^
2#@$$1$r;D$9$3$H$b9M$(il$k!#$=7F!":G=*E*KO1G
$b2;@<$b>C5n$7!"J8;z>pJs$N$_$r;D$;$P$h$$!#

0lJ}!"E>Aw$NLdBj$O!"1GA|%K%e!<%9$r1s3VCO$K$$$kMxMQ
$KDs6!$9$k:]$KLdBjKJ$k!#MPEG-I $N%S%C%H%l!<%H$r7QB
KE$$$FE>Aw9k$,$G$-$kh&$J9bB.%M%C%H%o!<%/$H!"2??M$b
MxMQ<T$+$i$NMW5a$KF1;~$KBP1~$G$-$kh&$J5!<%P$rMQ0U
J1lPJi$J$$!#

%f!<%6%$%s%?%U%’!<%9

MxMQ<T$O Informedia News-on-Demand %$%s%?%U%’!<%9$K$h $jDs6!$5lk5!G=$rD>46E*$K;H$$$3J;k@m&$+!#MxMQ<T $,C5$7$F$$$k>pJs$rF@$k$?$aKO!"B>KINh$&$J5!G=r7 %9%F%`Kb$?$;J1lPJi$J$$$@m&$+!#$3$3$G$O!"$^$: $O?w7?$r:n$j!"MxMQ<T$N;HMQ46KhCFCN8+$rF@$kHHbK!" $$$/D+$N%$%s%?%U%’!<%9$r;nMQ$7F_$k!#

2hA|M}2r

8=:_!"%7!<%sJ,3d (%+%C%H$N8!=P) $N@:EY8~>e$rL\;X7F $$$k!#%7!<%s$dOCBj$NCfGO!"2hA|=hM}Kh$j!"$=$N%7!<%s $dOCBj$rBeI=9k=EMW$J%U%l!<%`$rCj=P$9$k$3$H$,$G$-$k!# %7!<%sA4BN$r$b$C$H$b$h$/BeI=$9$k$h$&$J=EMW$J%U%l!<%`$N A*Br$K4X$7FO!"8=:_8&5fCfG"$k!#D94|E*7W2h$H7F$O!" %-%c%W%7%g%s$dGX7J$K1G$C$F$$$kJ8;z$rCj=P$9k?aK!"J8 ;zG’<1$d OCR 5!G=$rAuHw9kM=DjG"$k!#$^$?>-Mh!"8!wg K*$$$F!"N`;wEY$K4p$E$$$?2hA|%^%C%A%s%0$N5!G=$NDs6!$b 7W2h$7$F$$$k!#

<+A38@8l=hM}

News-on-Demand GO!"%K%e!<%9J|Aw$rOCBj$4HKE,@Z$K J,3d$9kI,MW,$"$k!#$^$?!"$=$lHOJL$K!"OCBj$NMWLs$r@8@. $7!"<+A3$JH/2;$N1Q8l$GDs6!7?$$$H$b9M$($F$$$k!#5i$K! Ld9g$;KBP7$F!"3FOCBj$NFbMF$+$iE,@Z$J8!:w$r9T$&Lr3d$b C4CF$$$k!#$=$7$F!"Ld9g$;$+$i;~4V, <gMW$J35G0, %K%e!<%9 $N>pJs8;$rJ,N%7FCj=P9k3H$,$G$-$kh&KJlP!" %9%F%`$OHtLvE*$K8~>e9k$@$m$&!#

2;@<G’<1

;~4V<4$KBP1~IU$1$?2;@<$N=q$-2<$7$r@8@.$9k?aKI,MW G"$k!#%/%m!<%:%I%-%c%W%7%g%s$,$"kH$-$O!"=q$-2<$7J8 $N;~4V<4$H$NBP1~$rhjh/9k$?$a$K!"%/%m!<%:%I%-%c%W %7%g%sHHbK2;@<G’<1$N7k2L$rMxMQ9k$,!"%/%m!<%:%I%-%c %W%7%g%s$,$J$$$H$-$O!"2;@<G’<1KMjk7+$J$$!#$3$3$GMQ $$$?8@8l%b%G%k$O!"1987!A1994 $NKLJF$N%S%8%M%9%K%e!<%9 $+$iJk5pBg$J%3!<%Q%9$h$j@8@.$5l?!"V0lHLE*$J1Q8l$N %K%e!<%9!W8@8l%b%G%k$r:NMQ$7$?!#

?^=q4[$r8!:w$9$k:]$K$O!"2;@<G’<1$OMxMQ<T$N8}F,$Khk Ld9g$;$r2DG=K7!"%$%s%?%i%/%7%g%s$rhjD>@\E*K9k3 HKhj!"%$%s%?%U%’!<%9$r4JN,2=7F$$$k!#%$%s%?%U%’!< %9$K8}F,Kh$kLd9g$;rAH_9~$`$3HKhj!"Ld9g$;$rhj =V4VE*$+$DD>@\E*$K9T$&3H$,$G$-$kh&KJkN$G!"A}B" 5l$F$$$k1GA|%G!<%?XN%"%/%;%9$,MF0W$KJk!#

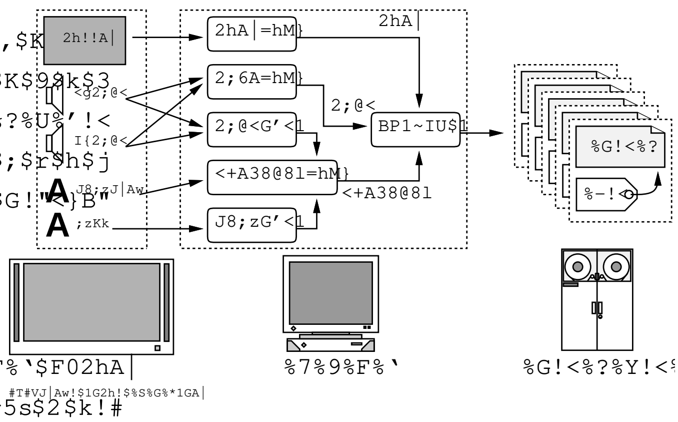
3.4 LdBjE@

News-on-Demand Nh$&$J40A4$K<+F02=$5l?%7%9%F%`$F02hA| $O!"EvA38m$j$,H/@8$9$k!#0J2<$K 5 $D$N8m$j$N<oN`$r5s$2$k!# 3liN2]Bj$r2~A1$9k?aK!"L\2<8&5fCfG"$k!#

- OCBj$N8mJ,3d
  0lDNOCBjKBP9$k1GA|CJMn$N3+;O$H=*N;$r8mCF 9k$H@8$8$k!#DL>o!"8mJ,3d$O!"%/%m!<%:%I%-%c%W %s<+BN$N8m$j, %/%m!<%:%I%-%c%W%7%g%s$N=hM}$N8m$ @<$N=q$-2<7K4pE/J,3d$N8m$jKh$k!"IT@53N$J 2<7Khk3H$,B?$$!#
- =q$-2<$7J8Cf$NC18l$N8m$j
  =q$-2<$7J8Cf$N8m$j$O!"2;@<G’<1$N8mj+%/%m!<%:% %W%7%g%s$N8m$j$+$N$$$:l+Kh$k!#$=$N7k2L$H$ OCBjNCfNC18l$N8m$j$d!"$=lKH<$&:w0zIU$1$d8 $*$1$kC18l$N8mjHJC$F8=$l$k!#
- F14|$N<:GT
  3N<:GT$N7k2L!"1GA|Cf$NB>$N>l=j$KB0$9$kO:$ $,J6$l9~$`$3HKJk!#0lHL$K!"%/%m!<%:%I%-%c%W %s$H2;@<G’<1$N7k2L$,0[Jk3HKh$j@8$8$k!#
- Ld9g$;G’<1$N8m$j
  3l$O!"MxMQ<T$,8!:wCf$K9T$&8}F,Kh$kLd9g$;$ G’<1$N8m$jN3HG$"$k!#MxMQ<TO3Nh$&$J8m$ 8+7?$i%-!<%\!<%I$+$iD>@\F~NO$7$?$j!":FEYH/@ JI7FD{@5$9$k3H$,$G$-$k!#
- Ld9g$;$KB’5J$$7k2L$NDs<(
  3N8mjO!">pJs$N:F8=N($HE,9gN($NI>2A$rDL7 5l$k!#Ld9g$;$H4X78$J$$OCBj$rDs<($5lk$+$b$ $$$7!"4XO"9kOCBj$r8+2a$4$7$F7^$&$+b7l 3liO!"0J>e$K5s$2$?LdBj$KM3Mh9k>l9gb"$ Ld9g$;$+$i8!:wMQ%-!<%o!<%I$r@8@.9k2aDx$GLdB k3HKhk>l9gb"$k!#

4 %^%k%A%a%G%#%"%G!<%?%Y!<%9<+F0@8@. $N>-MhA|

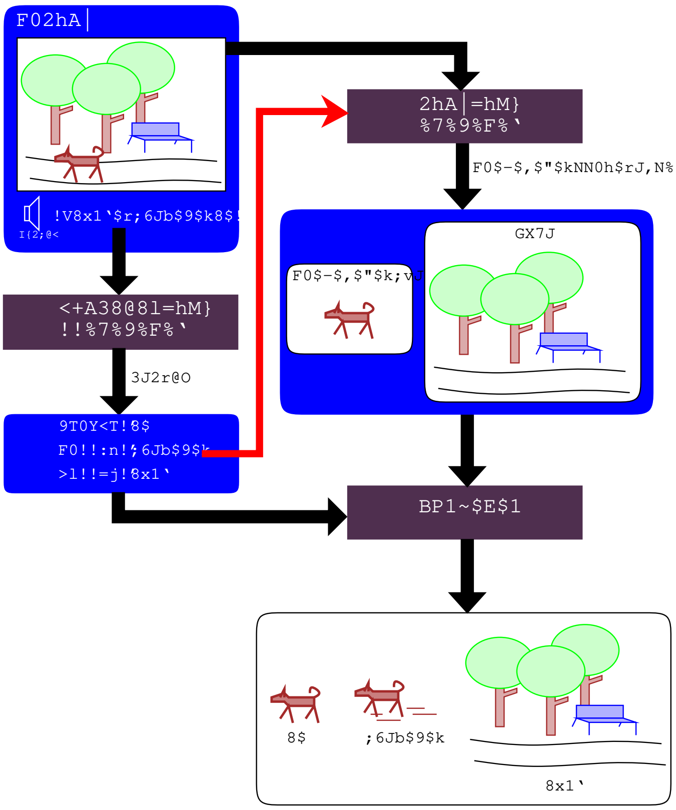
0J>e!"CMU $G9T$olF$$$k Informedia %W%m%8%’%/%H$K $$$F>R2p7?$,!":G8e$K8=:_;d$,9M$($F$$$k!"%^%k%A% %"%G!<%?%Y!<%9<+F0@8@.$N>-MhA|$r4JC1$K>R2p$9$k!# ?^ 3$K!"@8$N%G!<%?$+$i%G!<%?%Y!<%9Cf$N%G!<%?$,@ lk$^GNA4BNE*$J35G0?^$r<($9!#



?^ 3: MM %G!<%?%Y!<%9@8@.$N>-MhA|

$3$3$K<($7$?35G0$O4pK\E*$K Informedia %W%m%8%'%/%HG8H/A[$K4p$E$$$F$$$k$,!"K\8&5f$G$O!"40A4$J<+F02=$r<g4c$K$*$$$F$$$kLuGOJ/!"$`$7$mB?>/?M<j$,2CoCFb$h$$$N$G!"$h$j1GA|FbMF$KF'$_9~$s$@=hM}$r9T$$!"$=$N7k2LH7F-$a:Y$+$J8!:w%-!<$NIUM?$r9T$&3H$rL\I8$H7F$$$k!#

8&5f2]BjH7FO!"V1GA|KBP9$k=hM}$H!"$=$1$KIU?o$9$k<+A38@8l>pJs$KBP9k=hM}$rE}9g$7$F07$&!W3H$r9M$($F$$$k!#6qBNE*$J%$%a!<%8H7$F!"?^ 4$KNc$r<($7$?!#



?^ 4: 2hA|=hM}$H<+A38@8l=hM}$rE}9g7?=hM}

K\%7%9%F%`$NFCD'$O!"<+A38@8l=hM}$N7k2LF@$i1?3J>pJsJI$K4p$E$-!"2hA|=hM}$rJQ$($kE@G"$k!#$3N3HKhj!"<+A38@8l>pJs$K4^$^1k2hA|$K4X$9$k>pJs$r:GBg8B$K3hMQ$9k3H,G-$k!#?^ 4$G$O!"V;6Jb$9$k!W$H$$$&F0:n$rH<$&F0;1$,<+A38@8l>pJsCf$K4^$^$1$F$$$k$?$a$K!VF0:nNN0h!W$NCj=P$r9T$C$F$$$k$,!"$?H($P!V@V$$!W$H$$$&7AMF;1$,EP>l$9$1$P!VV@V7OE}$N?'$r4^$`NN0h!W$NCj=P$H$$$C$?=hM}$r9T$&!#

8=;~E@GO?^ 4$K<($7$?$N$KN`;w$7$?1GA|$GHs>o$KC1=c$J?w7?$r9=C[$7I>2A$9$k<B83$r9T$$$O8$a$?$H$3$m$@$,!";#8e6qBNE*$J%7%9%F%`$N@_7W$H<BAu$r9T$&$3HKJm$&!#

5 $*$ojK

K\NX9VGO!"CMU $G9T$o1F$$$k Informedia %W%m%8%'%/%H$H$$$&!"Hs>o$KM%$1$?!"$+$D2h4|E*$J;n$_$r>R2p9k$H&$K!"N`;w$N8&5f$G$"$k<+J,$N8&5f$K$D$$$F4JC1$K>R2p$7$?!#

J*!"K\8&5f$K6=L#$r$*$bANJ}$O!"http://www.mtl.t.u-tokyo.ac.jp/~ide/Research/research.html 0J2<$r;2>H$5$1$?$$!#

;29MJ88%

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