

Fairness ad-hoc Report

DVJ request for comments

Mechanisms

- Freeconference.com facilities
- Weekly meetings
- Timing to allow European participants
- Limited due to vacation timings
- Minutes sent to reflector*

Meeting sequence

- 2003Jun11: DVJ&Necdet attending
- 2003Jun18: DVJ&others&!Necdet
- 2003Jun25: DVJ&others&!Necdet
- 2003Jun25+: DVJ vacationing also

AdHoc discussion topics (1)

- Normalized fairRate (fullScale= 2^{16}).
1st meeting only (lower priority)
DVJ: Specify time constant and full scale
Necdet: Simple hardware (2^n multipliers)
- Upper class interactions
64 stations for scenario analysis
Scenario analysis: dvj_adhoc1_01.pdf

AdHoc discussion topics (2)

- **ClassA0 bandwidth support**
1st meeting:
classA0 has bounded jitter as currently defined
2nd meeting:
D2.3 classA0 is broken
downstream shaper must also include STQ
- **ClassA1 bandwidth support**
Supportable levels are $1/N$ as per current spec
Supportable levels are N and feedback required

AdHoc discussion (3)

- ClassB bandwidth support

1st meeting:

classB is similar to classA0

2nd meeting:

classB must be different

For single-queue: 80-90% of the link bandwidth

For dual-queue: 100% of the link bandwidth

May require a form of queue-depth feedback

Uncovered topics

- Well defined upstream behavior
 - ClassC – Shaper to before congestion point
 - ClassCC – Shaper after congestion point
 - ClassB-EIR – Adds stop as STQ fills
- Well defined interface
 - Conservative, aggressive, or differentiated variants

Fairness background slides

From original adhoc proposal

Procedure

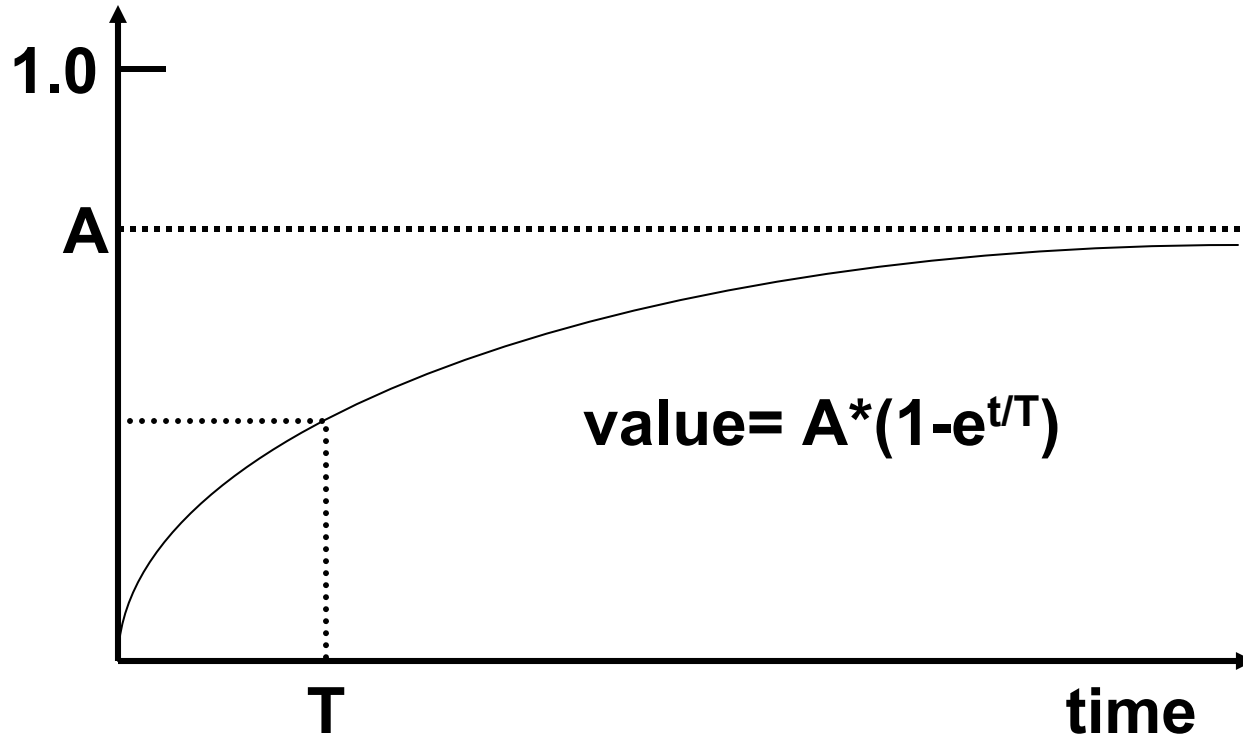
- Deliverables

Comments	editors and readers show sufficient (desired) or provide corrections as necessary
Equations	engineers
Simulations	academics & skeptics
Filters & loops	DSP and control theory

- Constraints

Formats: reserved fairness frame fields only
Comparable/reduced computational complexity
Wide dynamic range (Mb/s to Tb/s)
Limited travel \$\$, free teleconference calls

DSP perspectives



Creative computing

// 3-bit accurate constant divide

$c = a/B$

$= a * (1/B)$

$= (a \ll \text{sh}A) + N * (a \ll \text{sh}B)$

where $N=1,-1$