CS 856 - Internet Transport Performance

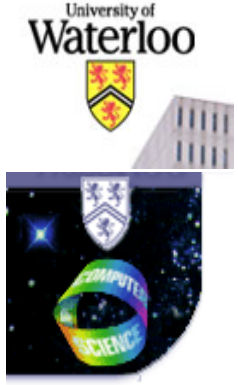
Course Offering: Spring 2004, Martin Karsten (`mkarsten@uwaterloo.ca`)

Seminar Style

- **introductory lectures**
- **individual student projects, for example:**
  - literature surveys
  - analysis of recent research proposals
  - implementation/experiment projects
  - etc.
- **written reports**
- **student presentations**

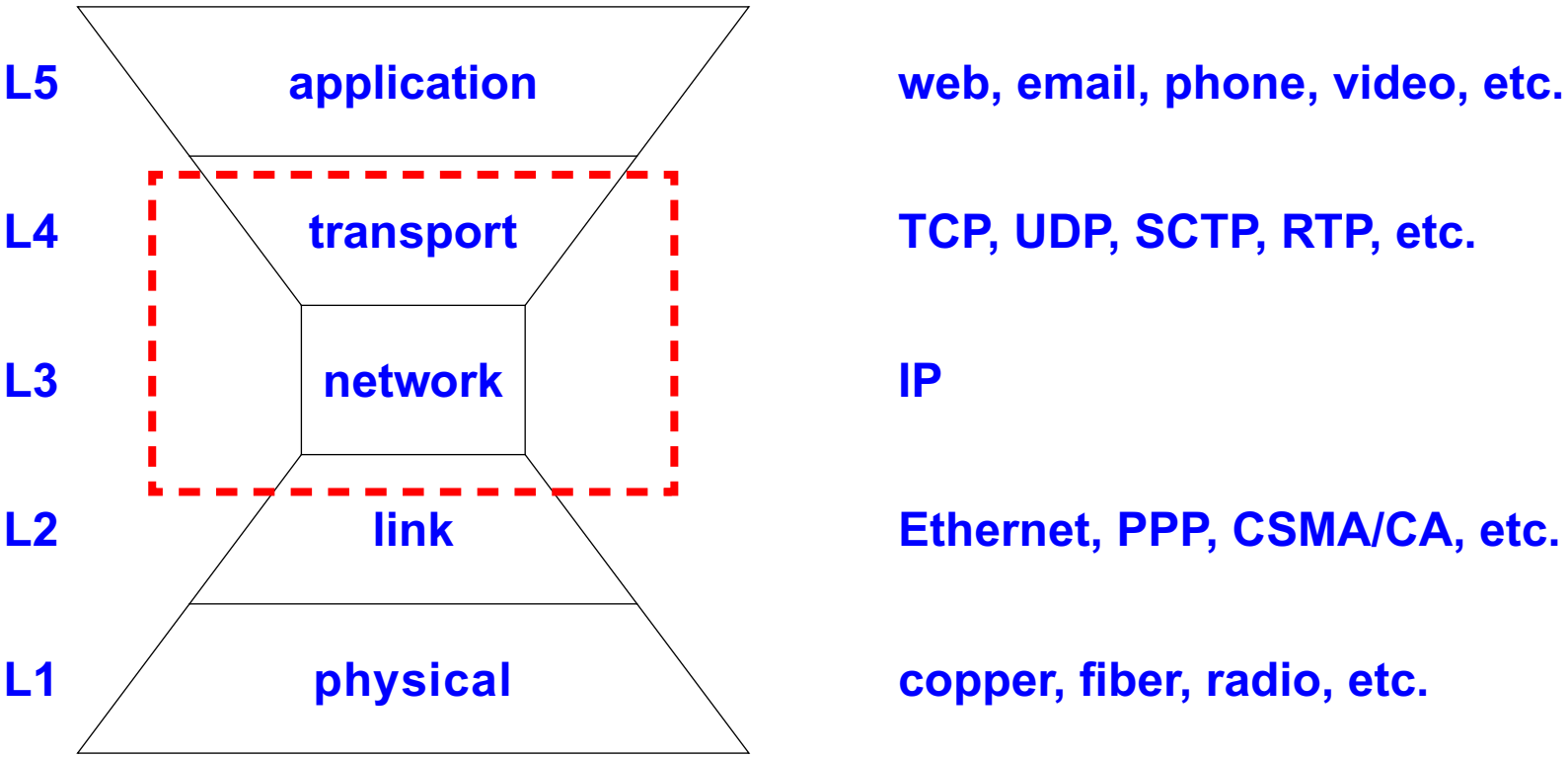
Further Info (under construction)

`http://www.uwaterloo.ca/~mkarsten/cs856/`



Scope

Internet hourglass model



L4: addressing, congestion control, end2end packet loss/error correction

L3: addressing, best-effort routing and forwarding

?: predictable transport performance and reliability

Contents (Sample)

Routing (Addressing)
- inter-domain: business & policy flexibiltiy vs. stability & complexity
- intra-domain: load control & efficiency vs. stability & complexity

Congestion Control
- convergence & fairness
- short-lived flows
- high bandwidth-delay products (e.g. inter-planetary communication)

Performance Guarantees & Quality of Service
- packet scheduling
- end-to-end scope

Resilience & Restoration
- failure resilience
- path restoration
- multi-path routing

Internet Architecture
- new addressing models
- mobility
  - device mobility vs. user mobility vs. process mobility