General Observations on WiMAX Application Performance

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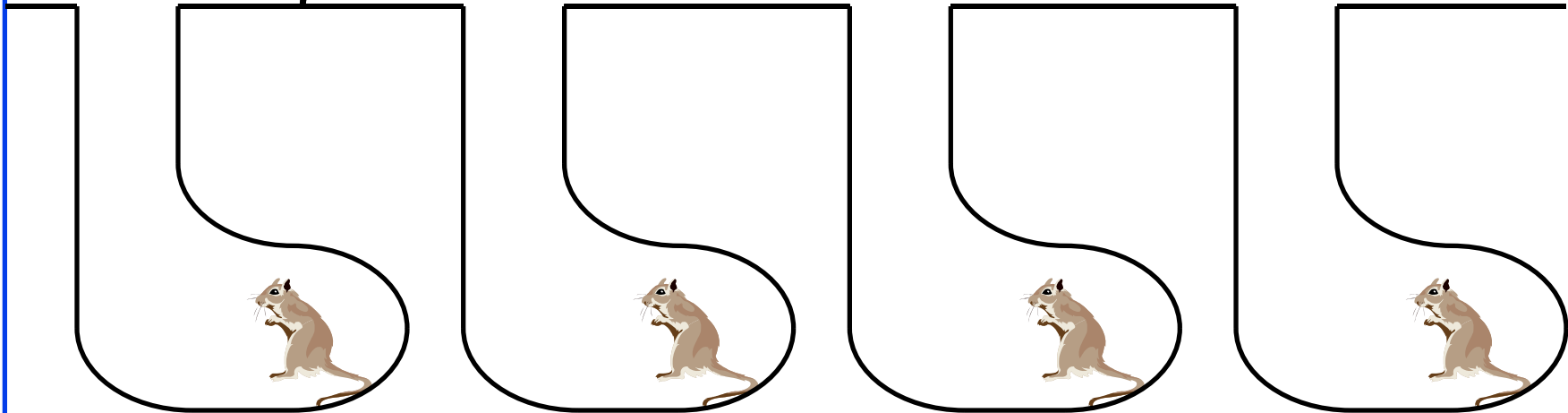Saint Louis, MO 63130 USA
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These slides are available on-line at:

http://www.cse.wustl.edu/~jain/talks/wimax602.htm

Performance: Rat Holes
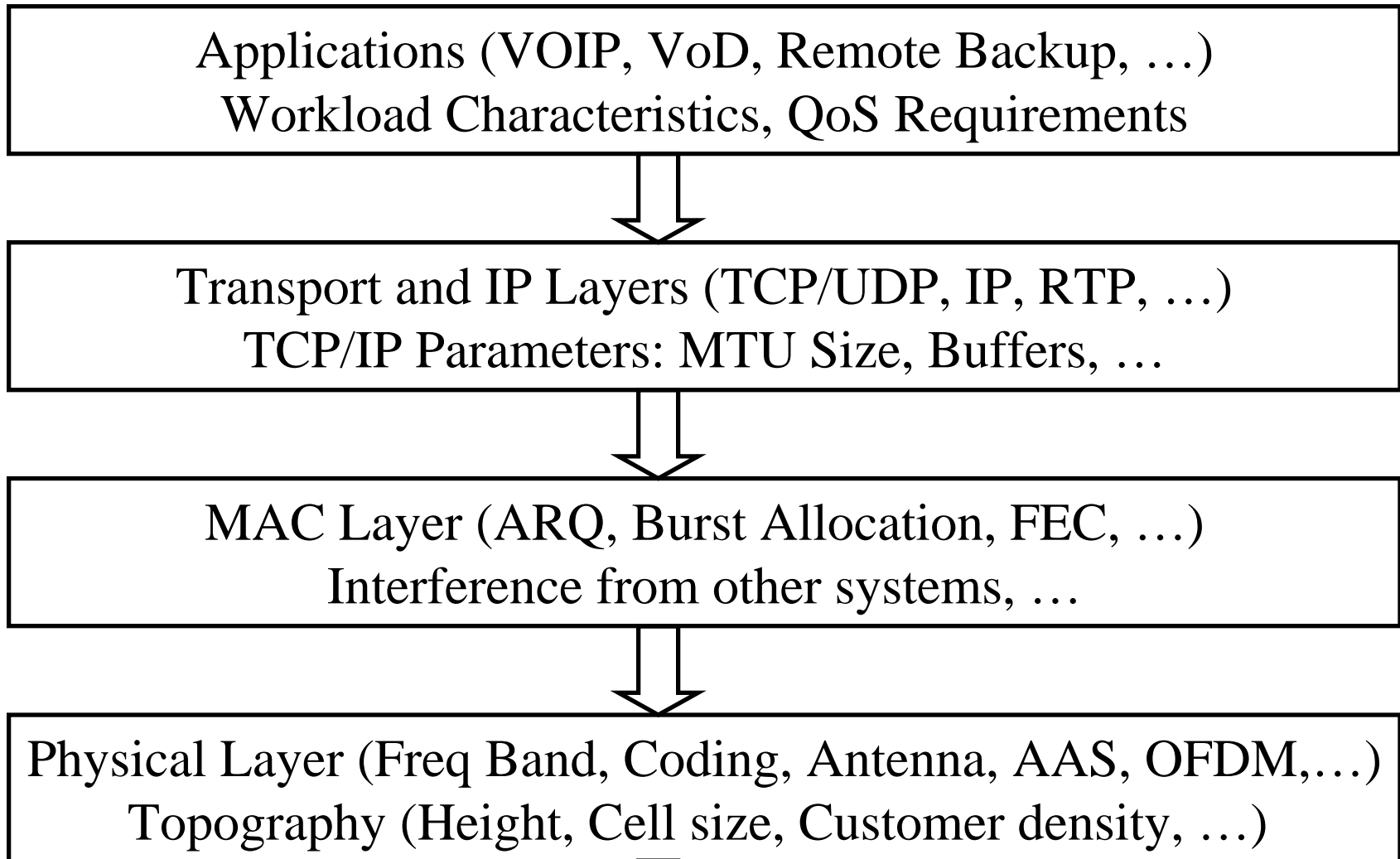
Configuration   Workload   Metrics   Timeliness

❑ **Ref**: Raj Jain, "The Art of Computer Systems Performance Analysis", Wiley, 1991 (Winner of best systems book award 1991).
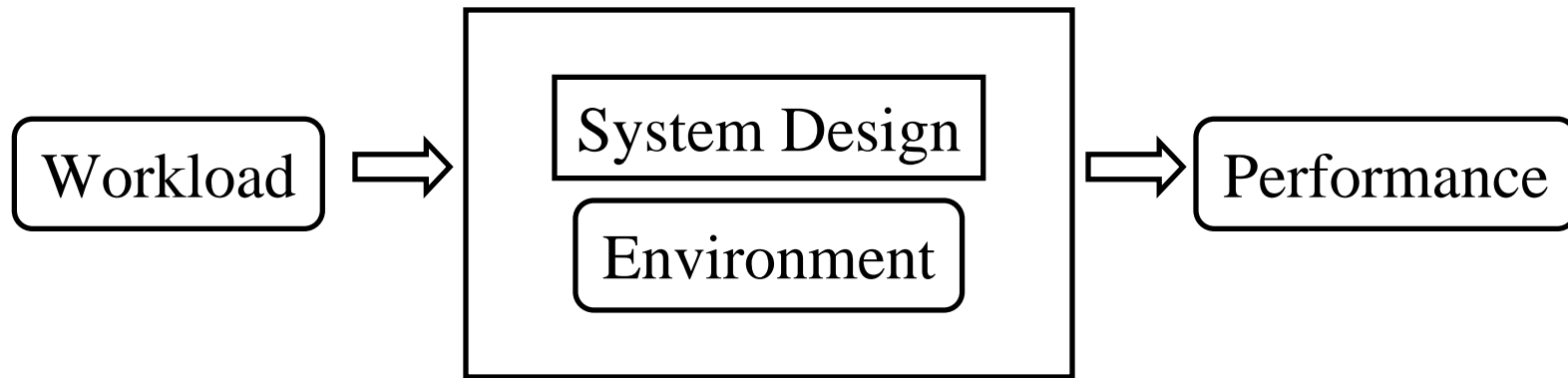
Simulation Modeling Subteam

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WiMAX Model Components

Applications (VOIP, VoD, Remote Backup, …)
Workload Characteristics, QoS Requirements

Transport and IP Layers (TCP/UDP, IP, RTP, …)
TCP/IP Parameters: MTU Size, Buffers, …

MAC Layer (ARQ, Burst Allocation, FEC, …)
Interference from other systems, …

Physical Layer (Freq Band, Coding, Antenna, AAS, OFDM,…)
Topography (Height, Cell size, Customer density, …)

Performance Standardization

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Workload  ⇒  ┌─────────────────────┐  ⇒  Performance
             │  ┌───────────────┐  │
             │  │ System Design │  │
             │  └───────────────┘  │
             │  ┌───────────────┐  │
             │  │  Environment  │  │
             │  └───────────────┘  │
             └─────────────────────┘
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❑ Standardized set of Applications (Application Profiles)

❑ Standardized workload characteristics (Workload Profiles)

❑ Standardized Environment (Environment Profiles)

❑ Standardized Performance (QoS Metrics Profiles)

❑ Expert Opinion: Most important metrics and characteristics