# UPS: Unified Protocol Stack for Wireless Sensor Networks

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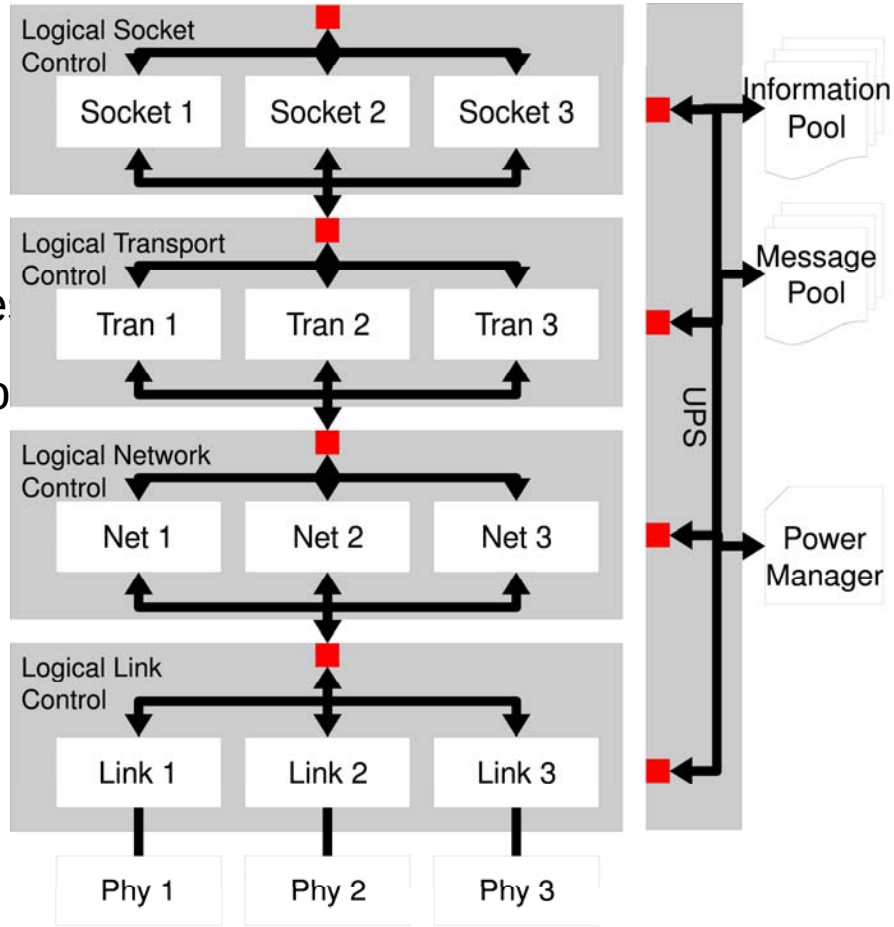
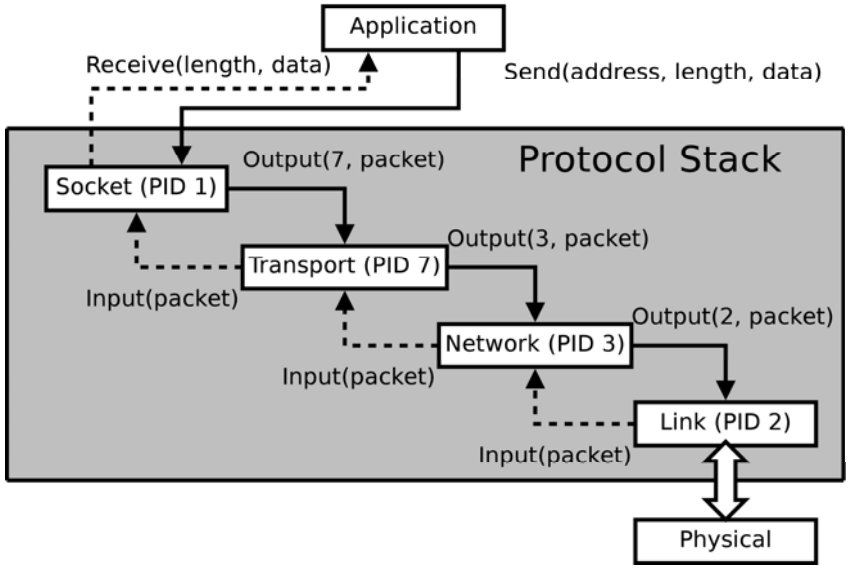
# UPS: Unified Protocol Stack for Wireless Sensor Networks

- UPS enables the co-existence of multiple modules in same stack layer
- UPS provides unified access to cross-layer data
- Implementation using Tmote Sky mote
- Simulation using the TOSSIM simulato
- Experiments
  - XLM cross-layer WSN protocol
  - Network layer multicast protocol (called RBMulticast)
  - Results shows that the network layer traffic co-exists and shares the same MAC layer without extra overhead

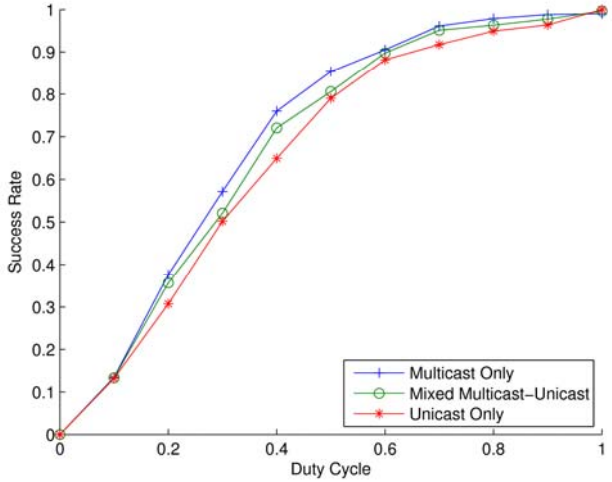


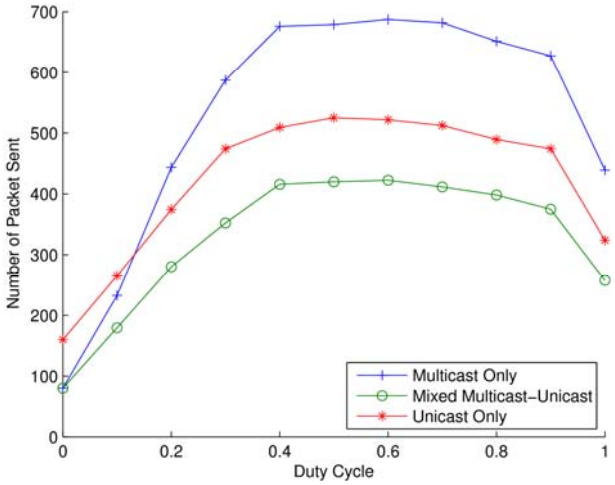
# Input Output Function Calls




- Multiplexing packets is the key to co-existence of multiple protocols in the same layer
- In UPS, the first byte of the packet header of each layer is reserved for Logical Control packet switching

# UPS Experimental Results




- Protocols that share modules behave similarly
- The total number of packets sent also clearly show benefits
- The UPS-enabled mixed multicast-unicast case provides the same functionality with fewer packets sent