

# TinyOS Core WG Report

---

Philip Levis (speaking on behalf of the WG)

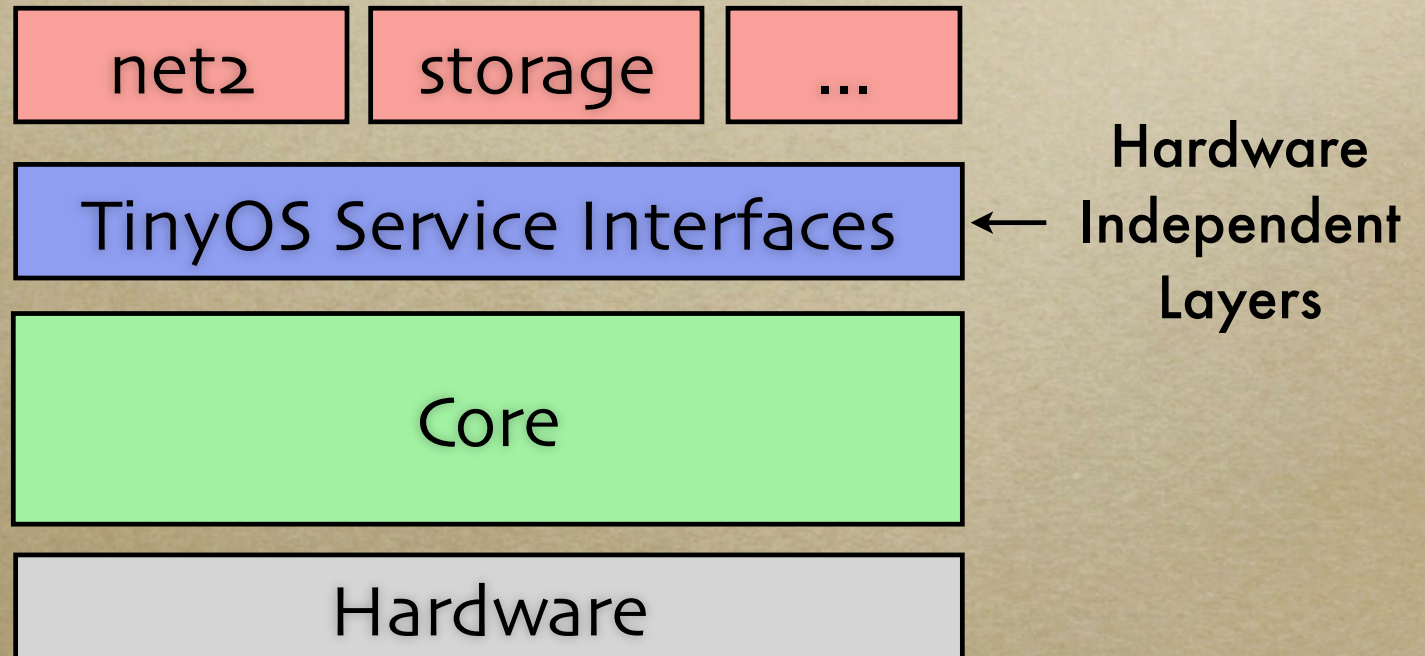
TTX4  
4/28/07

# Core WG Charter

---

- “The TinyOS 2.0 Core Working Group (core) decides what abstractions, services, and interfaces are in the TinyOS 2.0 core system, developing reference implementations when needed. While the core WG focuses on the hardware independent interfaces to hardware-specific abstractions (the basic OS services), it sometimes also addresses basic abstractions that many systems might use, such as data structures.”

# Core Responsibilities



# Milestones

---

- July 7, 2006: TinyOS 2.0 beta2 release
- November 6, 2006: TinyOS 2.0 release
- March 20, 2007: All WG TEPs below 120 sent to SC
- April 29, 2007: TinyOS 2.0.1 release
  
- June/July 2007: TinyOS 2.0.2 release

# TinyOS 2.0.1

---

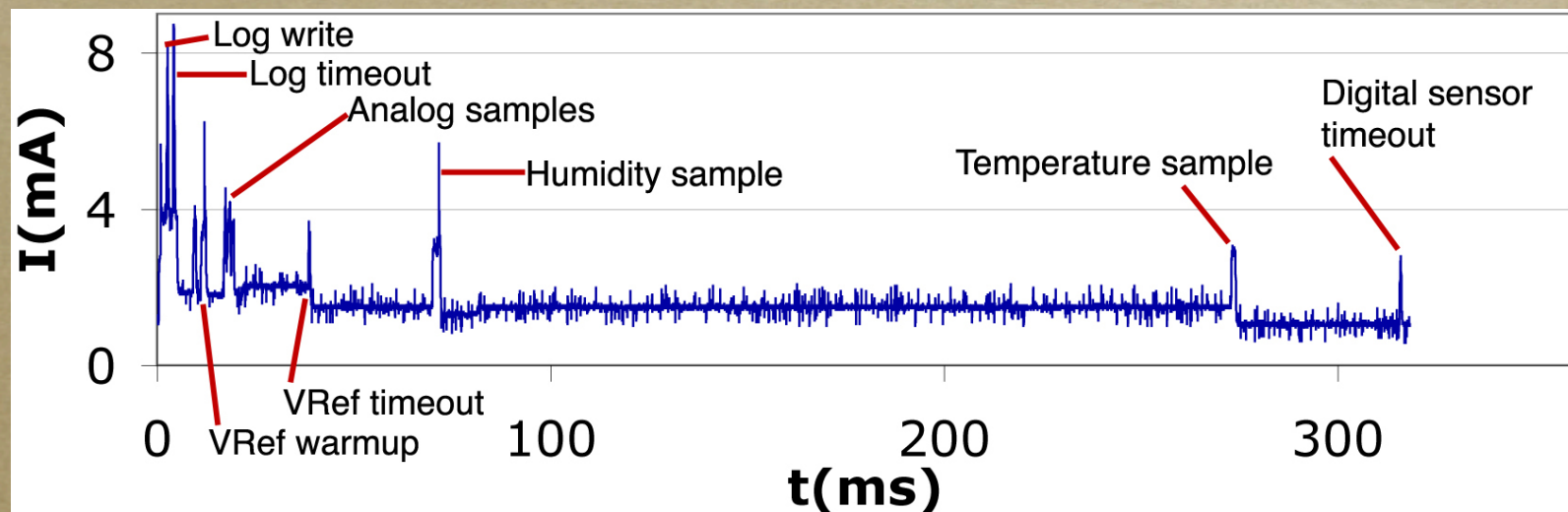
- Low-power CC2420 stack (TEP 126)
- Refinement of resource/energy management (TEP 108)
- lib/printf
- sensorboards/mts300
- Additional tutorials
- Sample application: AntiTheft
- Bug fixes, optimizations, etc.

# Core WG TEPs

Number	Title	State
TEP 1	TEP Structure and Keywords	Community Review
TEP 2	Hardware Abstraction Architecture	Sent to SC
TEP 101	Analog-to-Digital Converters	Finalized
TEP 102	Timers	Author Response
TEP 103	Permanent Data Storage (Flash)	Finalized
TEP 106	Schedulers and Tasks	Finalized
TEP 107	TinyOS 2.x Boot Sequence	Finalized
TEP 108	Resource Arbitration	Finalized
TEP 109	Sensor Boards	Community Review
TEP 111	message_t	Finalized
TEP 112	Microcontroller Power Management	Community Review
TEP 113	Serial Communication	Sent to SC
TEP 114	SIDs: Source and Sink Independent Drivers	Community Review
TEP 115	Power Management of Non-Virtualized Devices	Sent to SC
TEP 116	Packet Protocols	Sent to SC
TEP 117	Pins and Buses	Author Response

# Power Management

- A core advancement in TinyOS 2.0 is its integrated concurrency and power management.
- Using a hardware resource keeps it powered.
- Power trace from sample low-rate sensing application with no explicit power management:



# Roadmap

---

- Emergence of new platforms and chips
- Finalization of current TEPs
- Low-power CSMA radios
- Collaboration with net2 on link layer
- TinyOS 2.0.2: June 2007



# Open Questions

---

- Release packaging?
  - \* Responsibilities: core, or another WG?
  - \* RPMs, tarballs, debian packages
- Toolchain?
  - \* msp430-gcc
  - \* avr-gcc
- Component libraries to simplify application development?

# WG Members

---

7 Universities and 6 companies:

David Gay, Vlado Handziski, David Moss, Philip Levis, Kevin Klues, Jan Heinrich-Hauer, Andres Koepke, Phillip Huppertz, David Culler, Jonathan Hui, Gilman Tolle, Philip Buonadonna, Cory Sharp, Maxime Muller, Joe Polastre, Martin Turon, Benjamin Greenstein, Prabal Dutta, Lama Nachman, Jan Beutel, Robert Szewczyk, Martin Leopold and more...