



Hardware and Compute Abstraction Layers  
for Accelerated Computing Using Graphics  
Hardware and Conventional CPUs

Michael Doggett  
Justin Hensley

September 20, 2007

# Close to the Metal

A bottom up approach

Give application developers low-level access to the GPU for those that want it

Provide high-level implementations to those that don't want low-level access

Developers free to implement their own languages & environments

Forthcoming CTM SDK

- Compute Abstraction Layer (CAL)
- Hardware Abstraction Layer (HAL)

## CTM SDK : CAL vs HAL

**HAL:** Hardware Abstraction Layer

- Device specific, driver like interface

**CAL:** Compute Abstraction Layer

- Core API device independent
- Device specific extension available
- **Optimized** multi-core implementation as well as optimized GPU implementations
- Heterogeneous computing

# Hardware-Software Interface

## AMD Accelerated Computer Software



