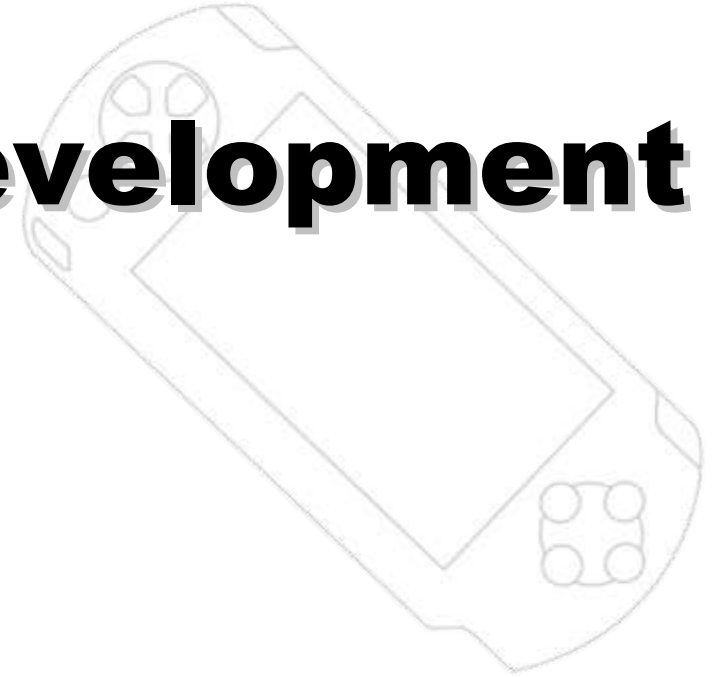




# Introduction to PSP™ Development

George Bain  
Developer Support Manager  
SCEE Technology Group





# Agenda



- What is “PSP™”?
- System Architecture Overview
- Developer Support
- How to I become a PSP™ developer
- Q&A



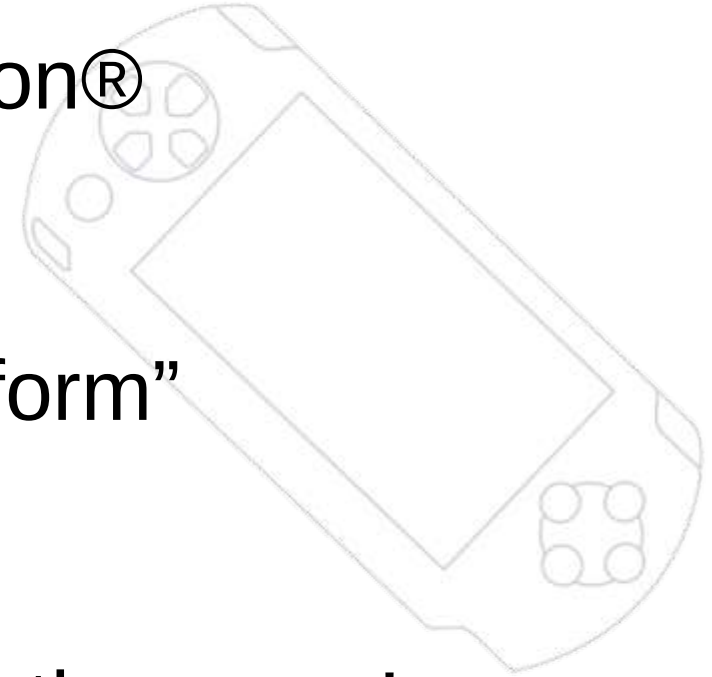


# **So what exactly is “PSP™” ?**

Extending the world of PlayStation®

New “portable entertainment platform”

Enabling Games, Movies and Music on the move!





# Value Pack!



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# PSP™ for Movies



- AVC (H.264) Decoder
- Large capacity on UMD
- 2 Hours of high quality video





# High-Spec Portable System



- Dual MIPS R4000 32bit Core
- 3D Graphics Engine
- H.264/AVC Decoder and VME
- 16:9 Widescreen TFT LCD
- WiFi (802.11b)
- Memory Stick PRO Duo™





# UMD™ (Universal Media Disc)

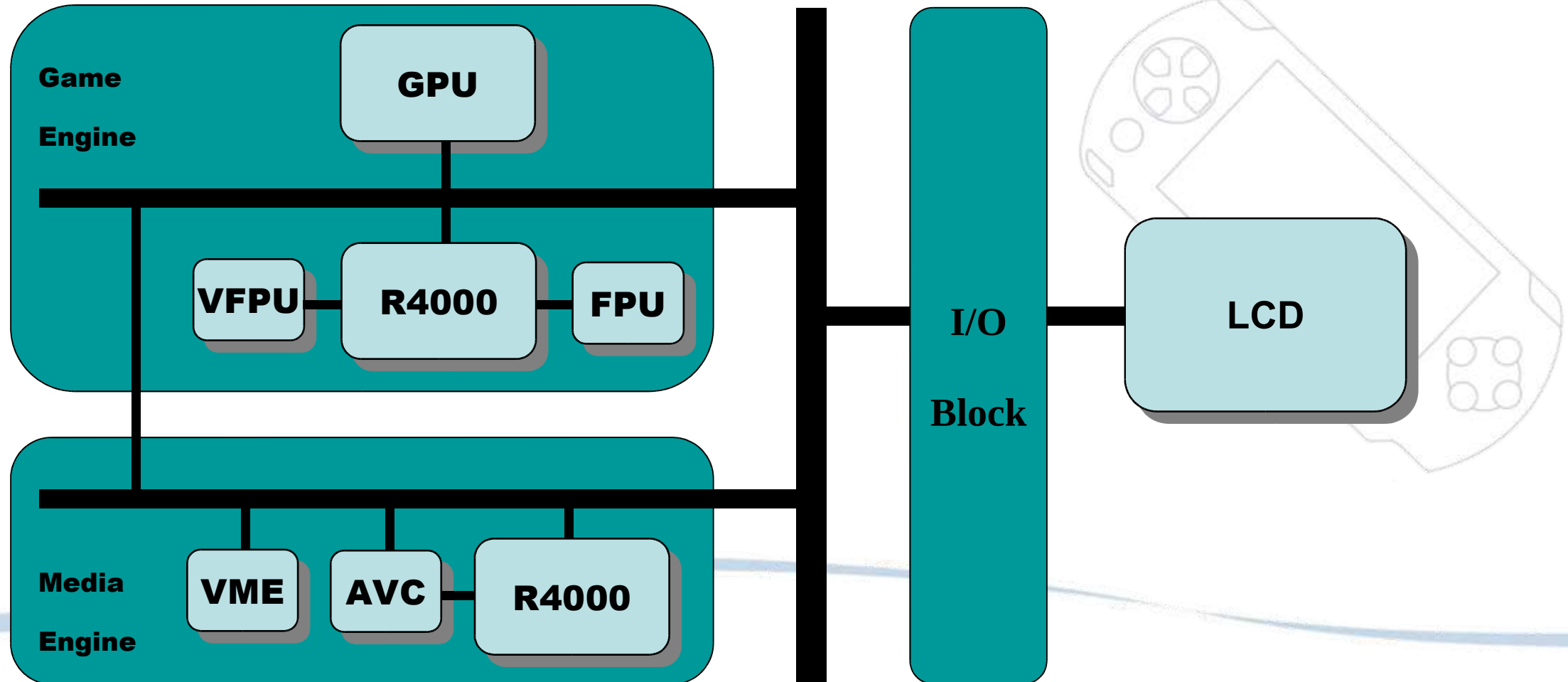


- Dual Layer: 1.8GB capacity
- High speed transfer rate
- Protective case
- Shock proof
- Copy protection





# Inside the PSP™





# CPU Specifications

- MIPS R4000 32bit Core: 1-333MHz
- DDR: 32MB
- I-Cache: 16KB, D-Cache: 16KB
- Scratchpad: 16KB
- FPU: 32-bit single precision





# Vector Operations

- VPU, VFPU: 2.6GFlops
- Full instruction set provided
- Libraries and source code available to developers
- Programmable as co-processor





# VFPU Features

- Like VU0 in macromode
- Easier to get performance than VU0
- Can write directly to memory bypassing the CPU
- Great for Physics, Particle Systems, Water etc.





# Graphic Specifications



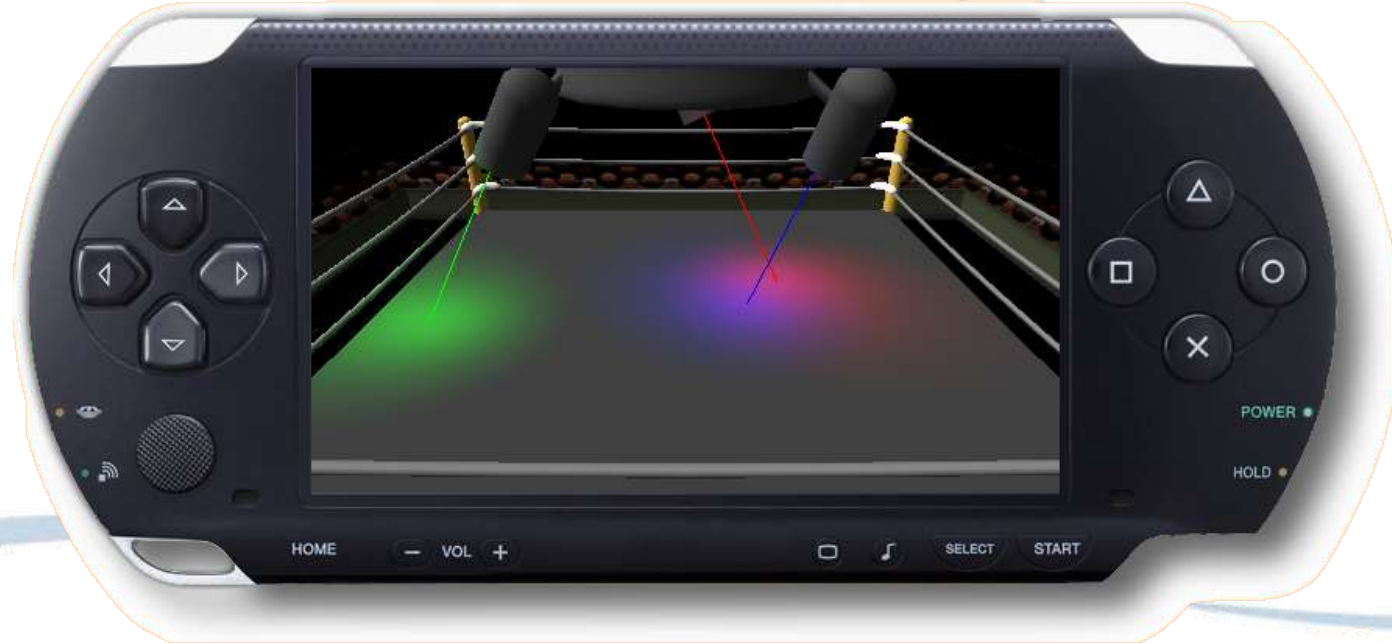
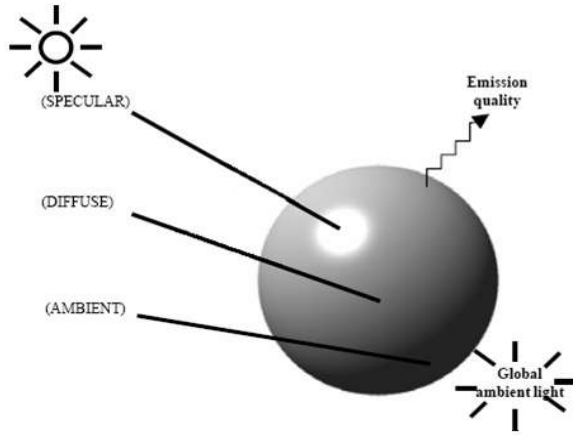
- 512bit Bus: @ 166 MHz
- EDRAM: 2MB
- Bus Bandwidth: 5.3 GB/sec
- Pixel Fill Rate: 664 M/sec
- Polys/sec (T&L): 35 M/sec





# Lighting

- Directional, Point and Spot lights

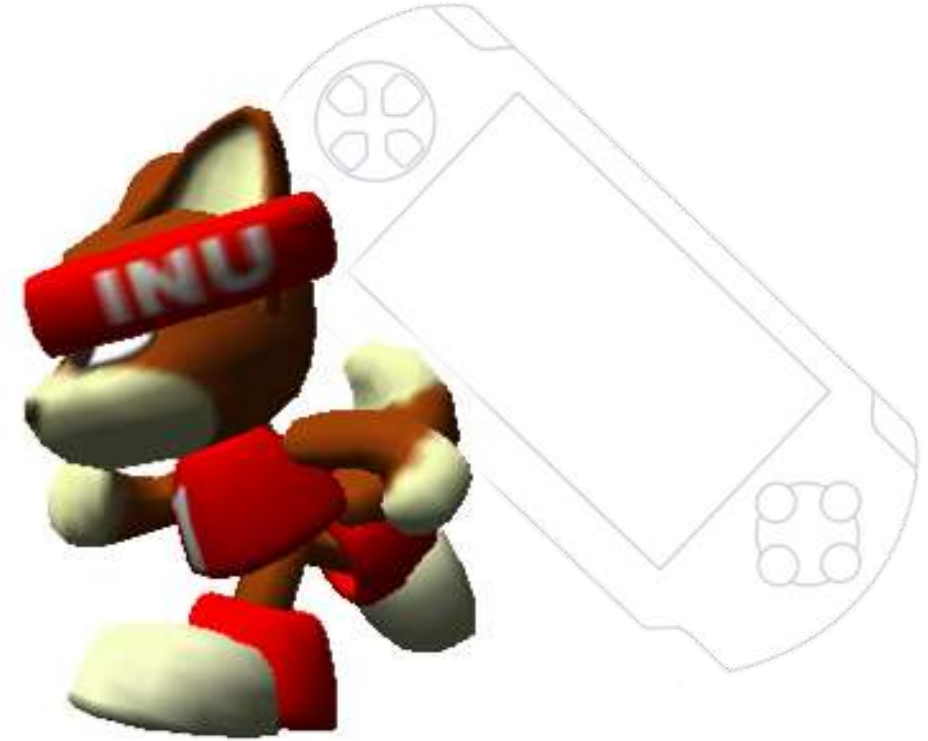
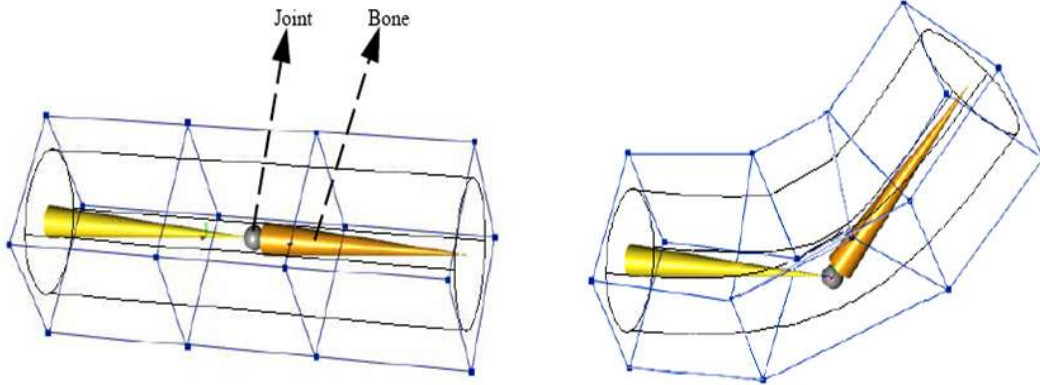




# Skinning



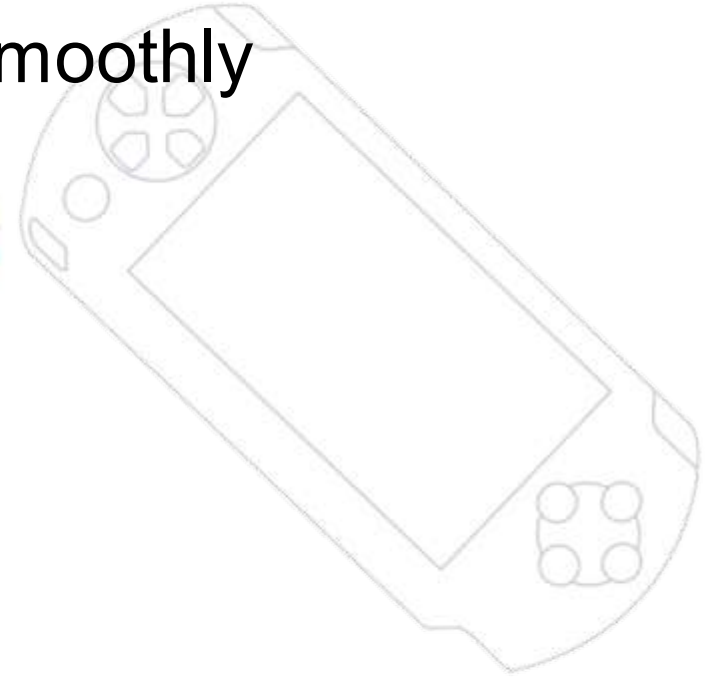
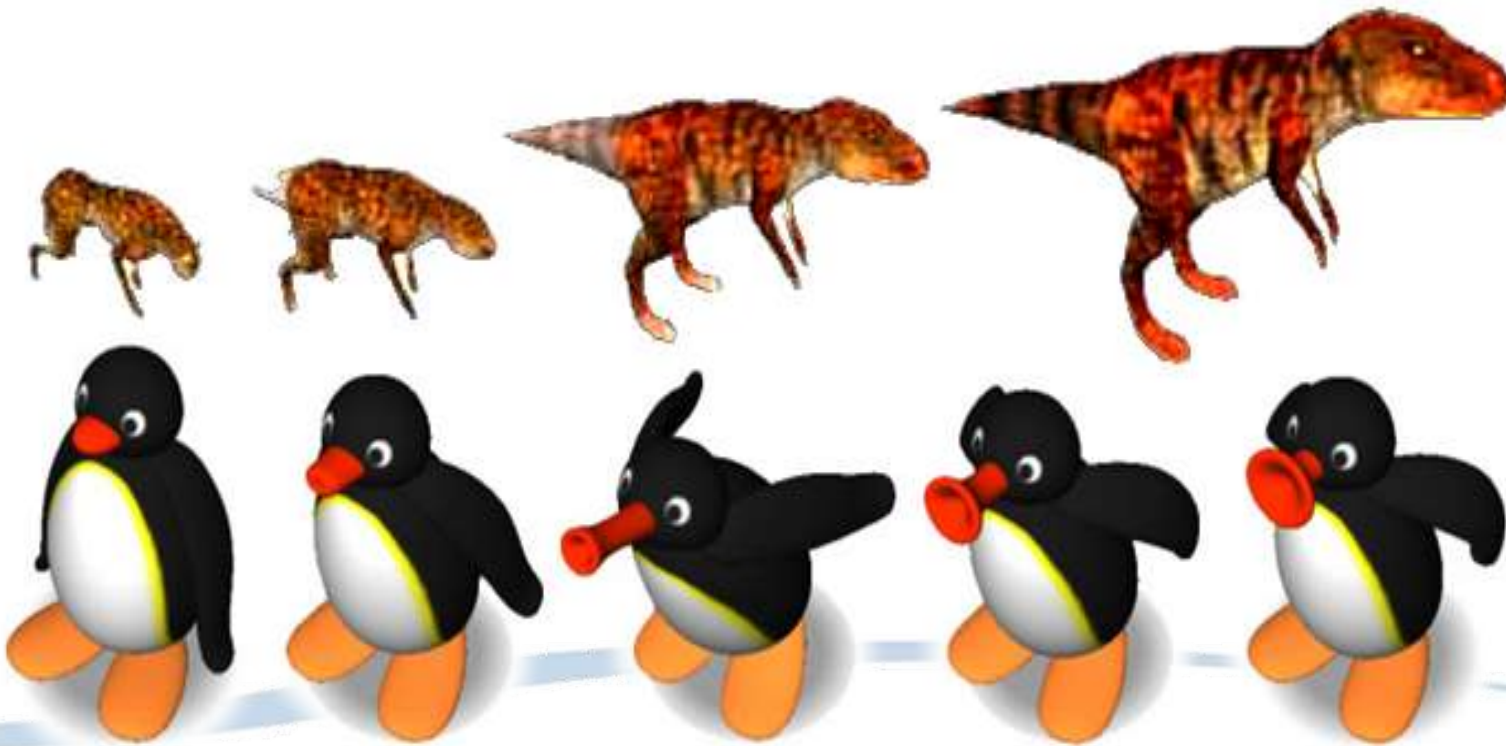
- GPU skinning function





# Morphing

- Interpolate models from one shape to another smoothly

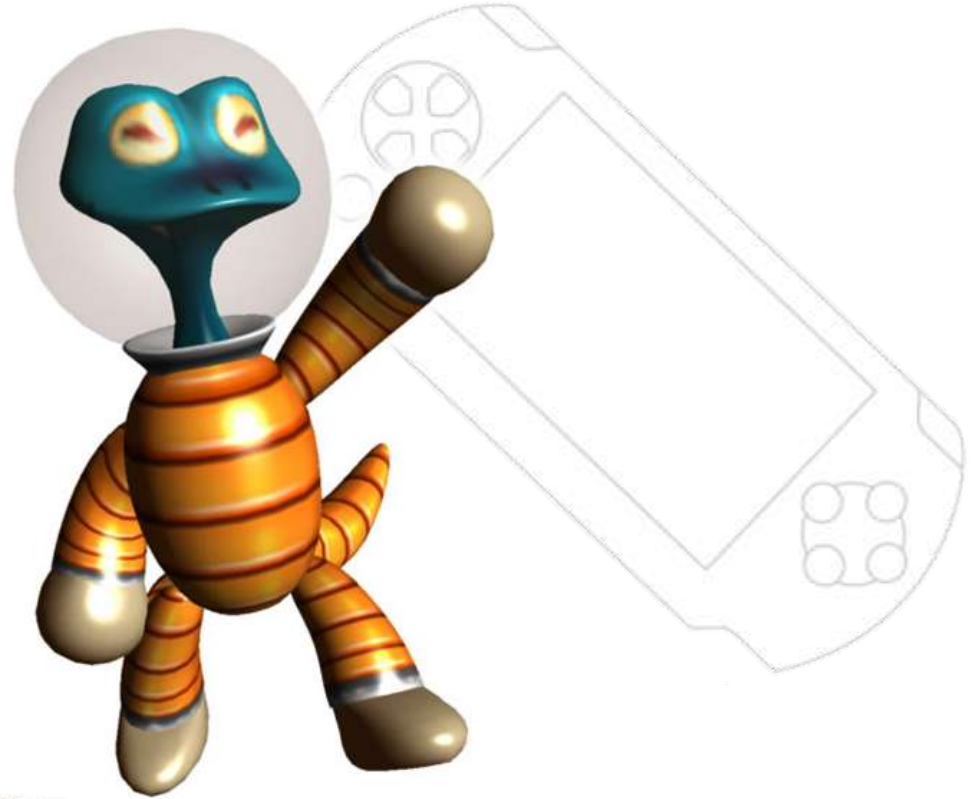




# Surface Tessellation



**Polygon model**



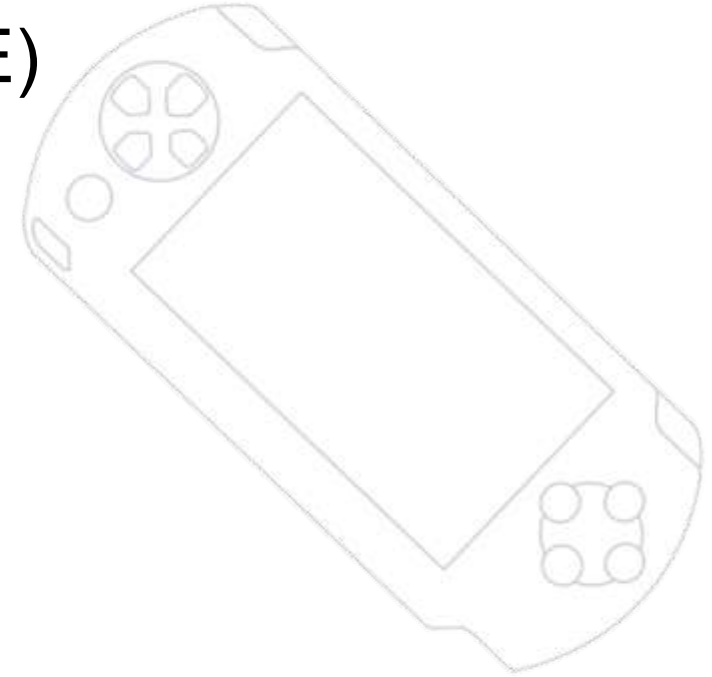
**Tessellated model**



# PSP™ Audio



- Processing done by Virtual Mobile Engine (VME)
- ATRAC3plus
  - High quality audio format
  - Suitable for recorded music
    - Intended for in-game music
    - Has embedded loop markers
  - Higher quality / compression than MP3
  - Built-in dedicated hardware decoder





# Memory Stick Pro Duo™

- Audio and video playback
- Game saves





# PSP™ Communications



- Integrated Wireless LAN (802.11b)

- IrDA

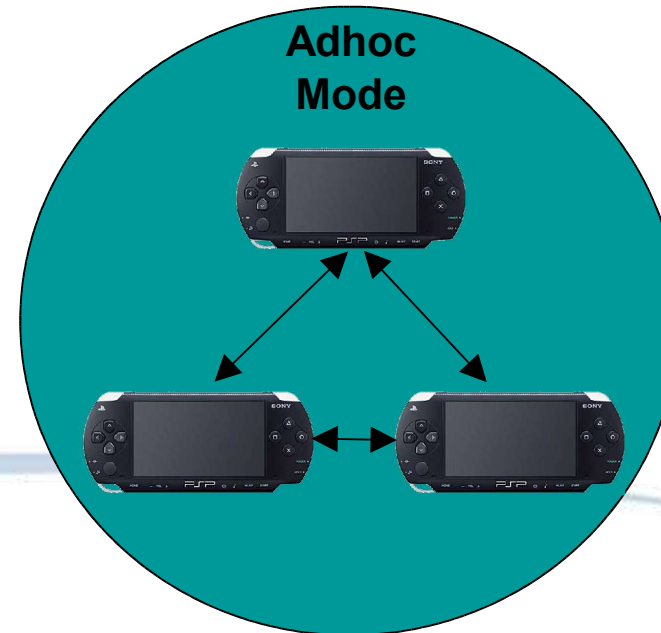
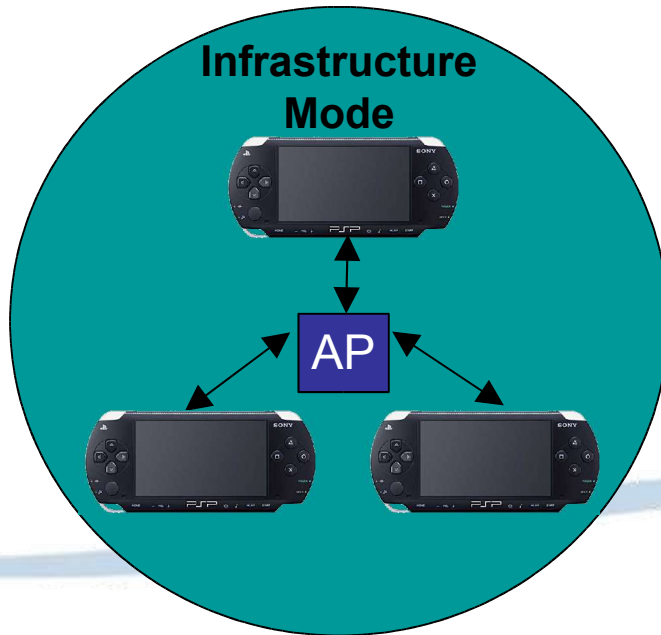


- USB 2.0 (supports “Hi-Speed”)
  - Possible connectivity: PSP™ to PS2™, PSP™ to PC
  - Libraries to support features



# IEEE 802.11 Overview

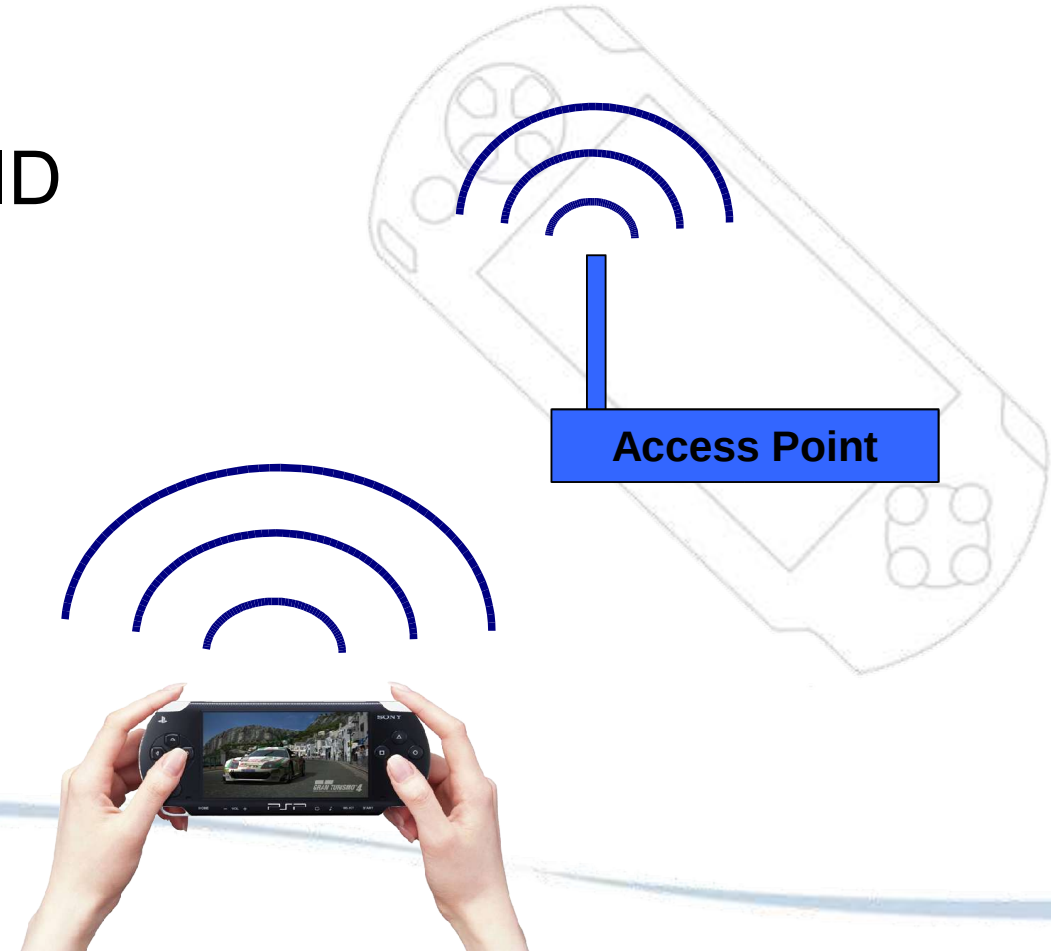
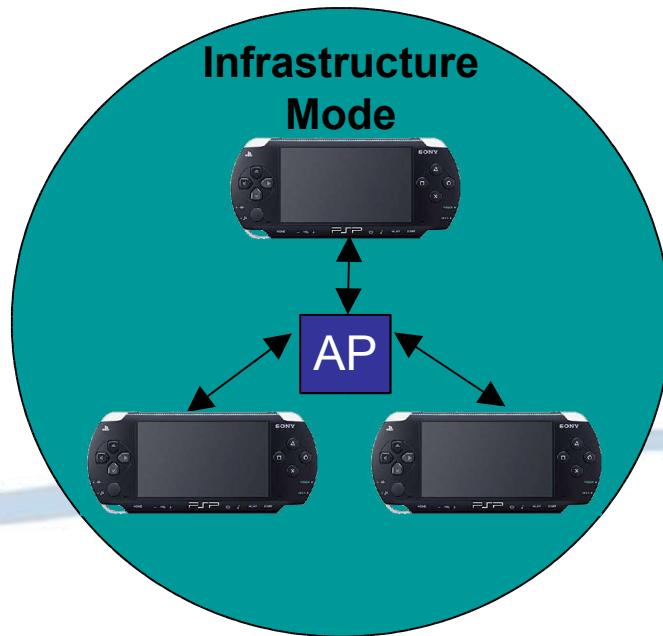
- Operates in two modes
  - Infrastructure (eg. through a hot spot)
  - Adhoc mode (eg. peer to peer)





# Infrastructure mode

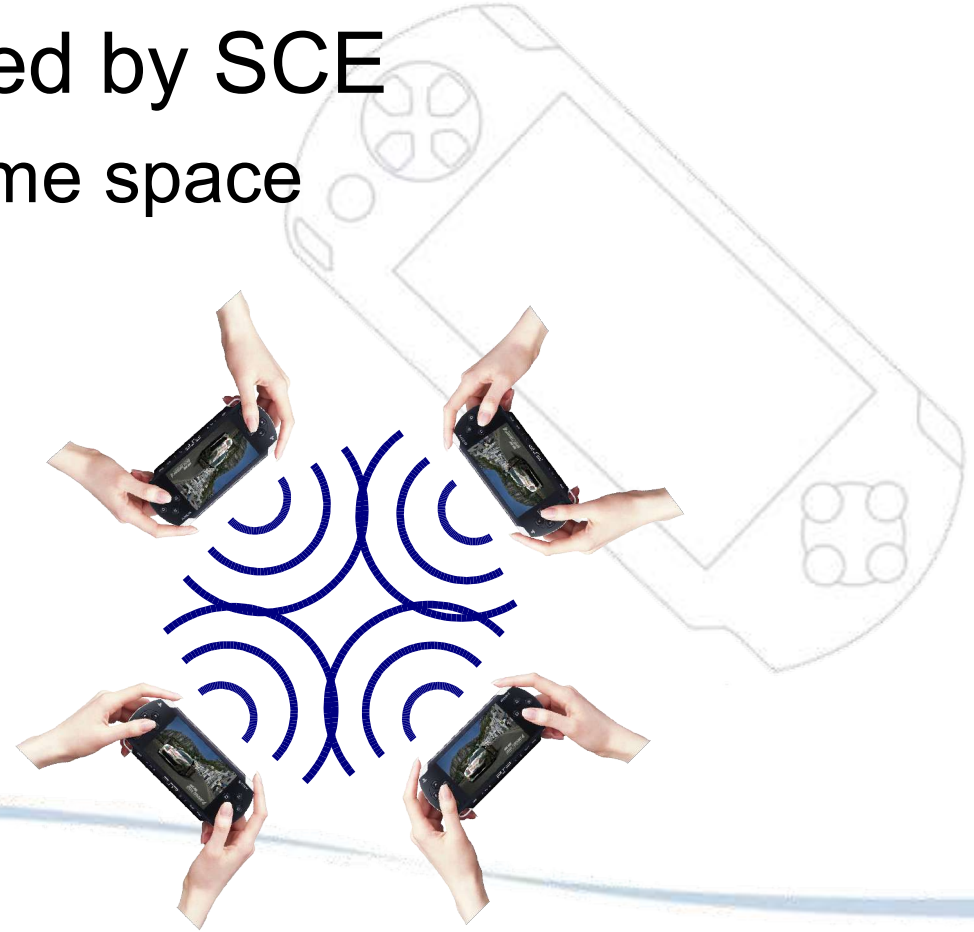
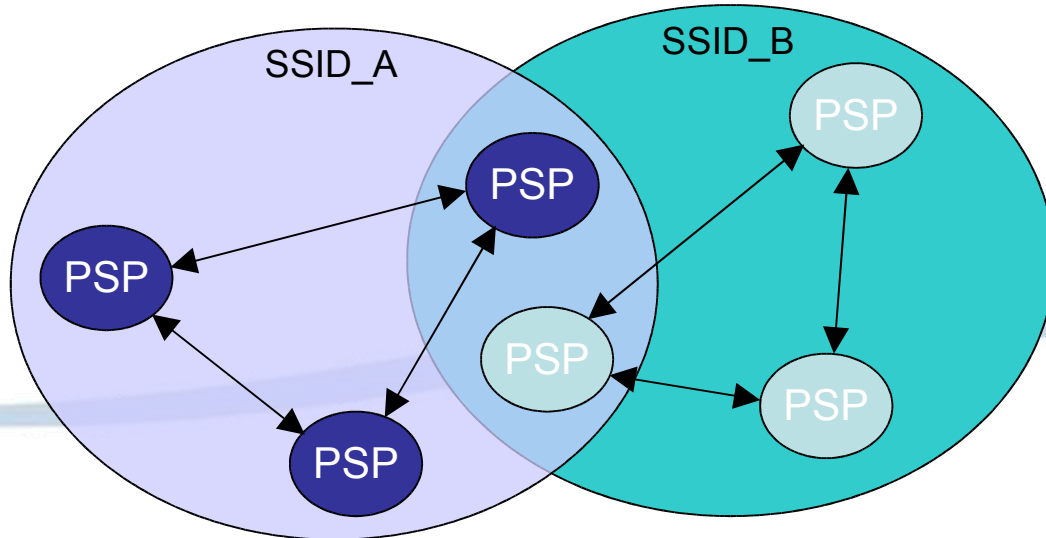
- Uses TCP/IP protocol
  - Connect to Access Point using SSID
  - Acquire IP address





# Adhoc Mode

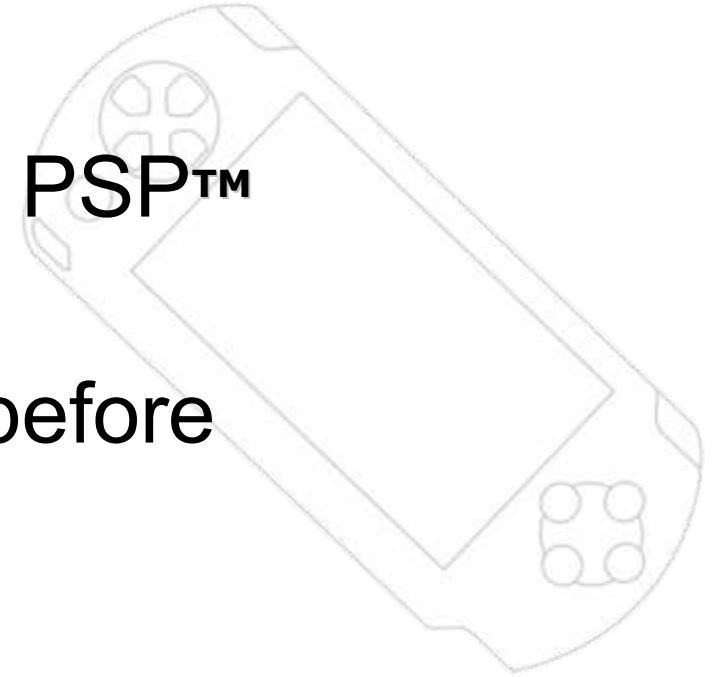
- AdhocID – title specific text assigned by SCE
  - Allows for games to coexist in the same space
  - Each game is identified easily
  - Uses a proprietary protocol





# Lobby Room

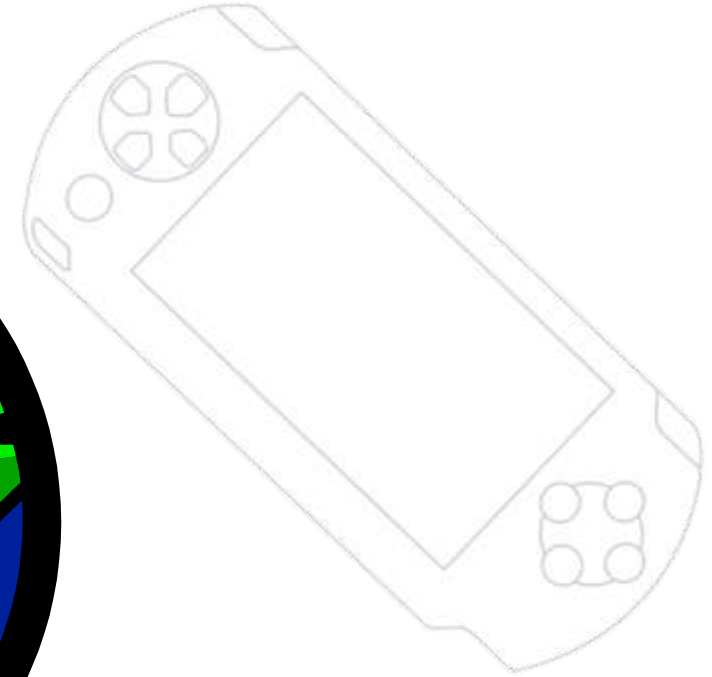
- Lobby room for finding other PSP™ units
- Each PSP™ automatically discovers other PSP™ in same lobby
- Game Room parameters are exchanged before joining a game





# Services Provided

- European & Australasian front line support
  - Websites
  - Newsgroups
  - Weekly News Bulletins
  - Direct e-mail/forums





# Additional Support Services



- Regular “PlayStation Fundamentals” seminars
  - At studios or our London office
- Onsite consultancy / Performance Analysis
- We support the major game developer conferences in San Francisco, London, Moscow, Melbourne etc.



European Developers' Forum





# PSP™ Demo Disc Content



- Game demo segments (inc. showcase of WiFi play)
- Video segments
- Music files
- Photos (for Slide Show)





# Want to develop for PSP™?

- Existing PSOne™ or PS2™ developer?
  - Speak to your Third Party Account Manager
- New to PlayStation development?
  - Visit **[www.newdev.scee.net](http://www.newdev.scee.net)** and signup





# The Process (for SCEE Region)

- Similar to PSOne™ and PS2™ development
  - Initial legal paperwork (Confidentiality Non Disclosure Agreement)
  - Access to Developer Support Website (Free Dev tools, docs, and technical support)
  - Proof of game concept to Third Party Relations
  - Tools and Materials License Agreement
  - Access to hardware development kits



# Any Questions?



SCEE Technology Group  
[www.technology.scee.net](http://www.technology.scee.net)

SCEE Corporate Site  
[www.scee.com](http://www.scee.com)

PlayStation Global Hub  
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