NINTENDO DS

Development Tool

**DSDEV with ProDG**

SN Systems

**by Hudson & SN Systems**

**HUDSON**®

# Joint Effort from two experts

## HUDSON

- GC Development Tool series
  - GDEV, GBOX, NPDP, Gang Writer
- Mario Party Series developed for Nintendo

## SN Systems

- Standard Development Tool
  - ProDG for Nintendo64, AGB, and GC
- Low Cost development solution
  - SN-TDEV for GameCube
  - Used in 5UK universities, 2 Japanese Game Colleges
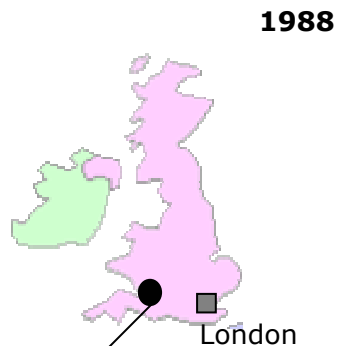
**DSDev**
Development Hardware

**ProDG**
Development Software

DS Development Tool set
by
Hudson & SN Systems

Will be available in DEC 2004-FEB 2005

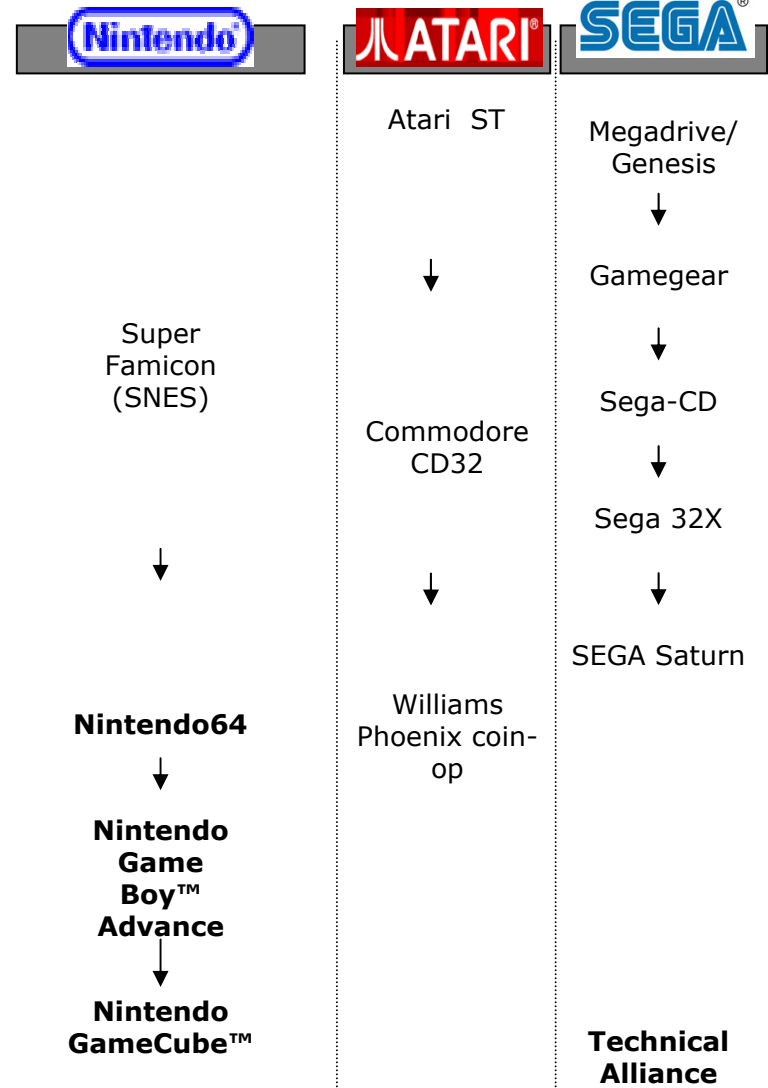**HUDSON**®

**SN Systems HQ**

**SN Systems Limited**

- HQ in Bristol, UK
- Only company in the world dedicated to console development tools
- Independent Company
- Founded by two game developers in 1988
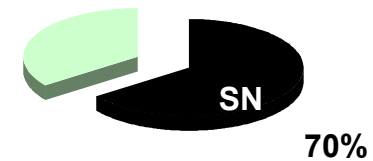- Developed tool chains for over 10 consoles

**1988**

**2004**

London

| Nintendo | ATARI | SEGA |
|---|---|---|
|  | Atari ST | Megadrive/Genesis |
| Super Famicon (SNES) |  | Gamegear |
|  | Commodore CD32 | Sega-CD |
|  |  | Sega 32X |
|  |  | SEGA Saturn |
| **Nintendo64** | Williams Phoenix coin-op |  |
| **Nintendo Game Boy™ Advance** |  |  |
| **Nintendo GameCube™** |  | **Technical Alliance** |

2

# Main customers

| North America | Europe | Japan |
|---|---|---|
| •Activision | • Argonaut | • Hudson |
| •Atari | •Climax | •Capcom |
| •EA | •Codemasters | •Konami |
| •Namco | •Eidos | •Namco |
| •Rockstar | •Eurocom | •SEGA |
| etc. | •VIS | •Square-Enix |
| | etc. | etc. |

Cross Platform Share

USA

SN

70%

EU

SN

75%

Japan/Korea

SN

20%
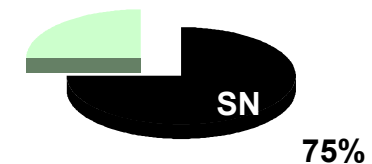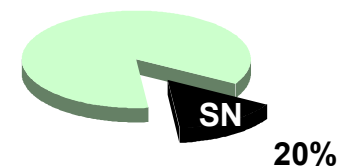
# HW Systems configuration and main features

ProDG

PC

Video Output as standard

TV    TV

REC 00:01

> 20Mbytes/sec

AC adapter

Video cassette recorder

USB 2.0

Debug Monitor as standard
(Image and sound capture)

Debugger main unit

Flash card

Debugger cable
(dedicated cable)

ROM Capacity max 512Mbytes (4Gbits)
Backup RAM 256 Kbytes

Communication cable

Modified
NINTENDO DS
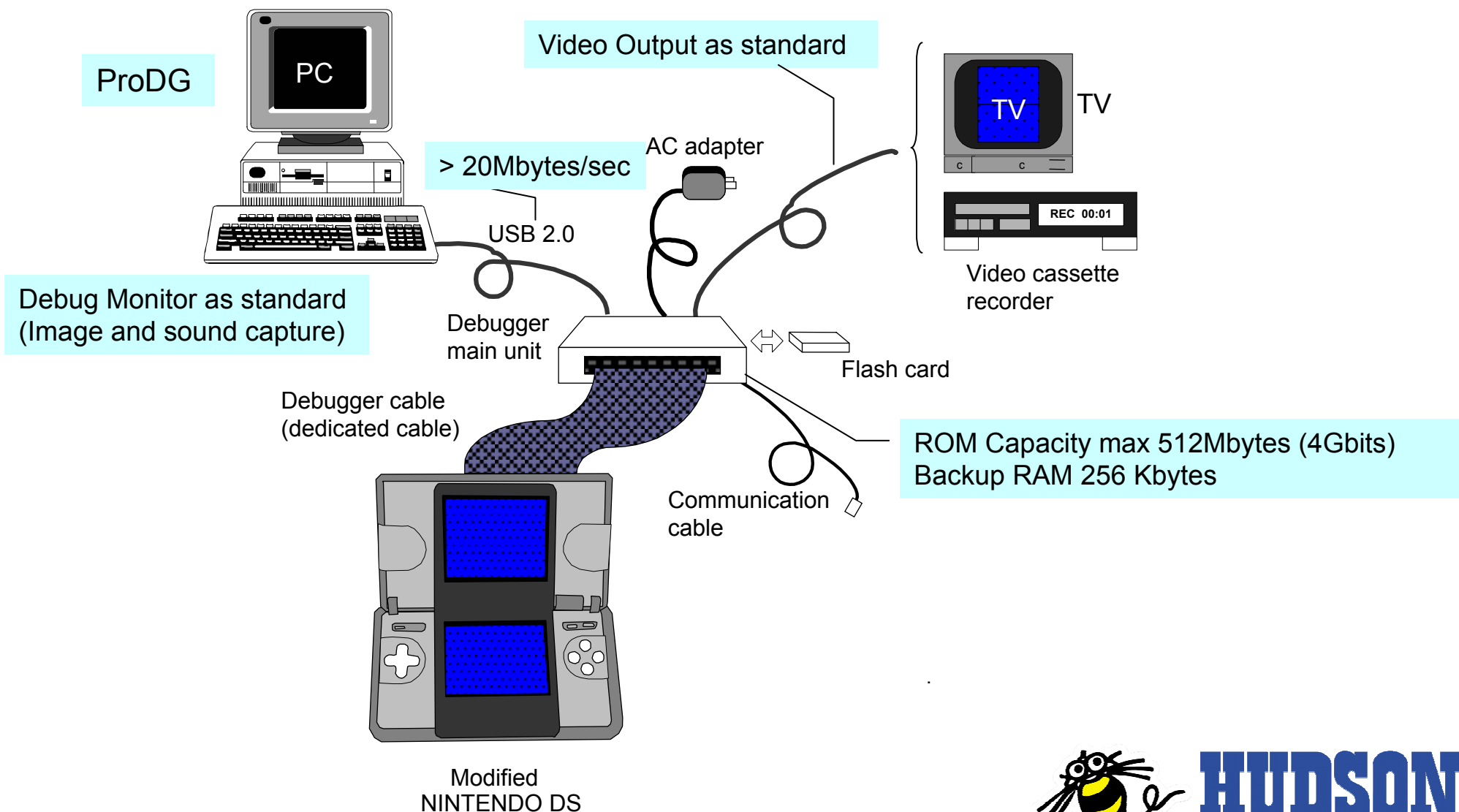
HUDSON®

# DS-DEV from Hudson

- High-speed interface USB2 (over 20 Mbyte/sec)
- ROM capacity: Max. 512 Mbytes (4 Gbits)
- Backup RAM: 256 Kbytes ( plan )
- Main memory: 8 Mbytes
- Flash card Writer
  - Switchable between 4M(Release)/8M(Debug)
  - Common memory space for Release/Debug
- USB Device Driver
- Video output
- Wire communication
  - Output of NINTENDO DS image (LCD 2 planes), sound on a TV or VHS recorder
- Debug Monitor

**HUDSON**®

- Transfers data from NINTENDO DS to PC
    - Image (LCD) info
    - Controller info
    - Info specified by user (touch panel, etc.)
- Data transfer at 60fps(1V)
- Data formats used on the PC
    - Image data: Windows Movie format
    - Other info: proprietary format
- History
    - Transferred data persisted on the PC

HUDSON®

# Debug Monitor Tool (Example)

PC application

Key     ABCD UDRL          LCD Image   Frame 5678

Debug Monitor

Reg A = 0x1234
Reg B = 0x5566
tablet X = 0x1122
tablet Y = 0x4567

Thread: Car
 Speed = 40km/h
 Status = Normal

Thread: Map
 View = Top
 Zoom = 40%

HDD

Monitor
history