

**Washington Area Computer User  
Group  
September 13, 2008**



**One Laptop Per Child  
XO-1 Machine**



**Haiti**



**Philippines**



**Peru**



**OLPC Learning Club, Family Mesh Meetup  
at Nortel, D.C.**

# First Non-pilot Deployment

## Uruguay, December, 2007



**For my own part, it's been a bit stunning to see the deployments and hand out the first machine. . . . while the OLPC team put all their blood, sweat and code into this project . . . because of the unshaken belief that it's the right thing to do, it was only while standing in Escuela No. 109 that I had my "holy shit" moment. . . . "now it's real." -- Ivan Krstić**

# Ivan Krstić's Blog Post

- **Not long ago, OLPC undertook a drastic internal restructuring coupled with what ... is a radical change in its goals and vision from those that were shared with me when I was invited to join the project. Adding insult to injury, I was asked to stop working with Walter Bender, without a doubt one of the most ... competent people I've ever worked with. Following Walter's demotion from OLPC presidency, I was to report instead to a manager with no technical or engineering background who was put in charge of all OLPC technology.**



# Selected Negroponte statements, 2008

- **Sugar is a very good idea, less than perfectly executed. . . . Our mission has never changed. It has been to bring connected laptops for learning to children in the poorest and most remote locations of the world. Our mission has never been to advocate the perfect learning model or pure Open Source.**
- **I believe the best educational tool is constructionism and the best software development method is Open Source.**
- **We need to reach the most children possible and leverage them as the agents of change. . . . For this reason, Sugar needs a wider basis, to run on more Linux platforms and to run under Windows.**
- **What is in front of us is an opportunity for big change. Sugar is at the core of it. . . . That said, Sugar needs to be disentangled.**
- **...it needs to be a fried egg, with distinct yoke and white, rather than having the UI, collaborative tools, power management and radios merge into one amorphous blob. Otherwise, it is impossible to debug and will be limited to the small, albeit growing, world of the XO hardware platform.**

# Core Electronics

- **CPU: x86-compatible processor AMD Geode LX-700; 64KB each L1 I and D cache; 128KB L2 cache;**
- **Clock speed: 433 Mhz;**
- **i586 instruction set**
- **Graphics controller: Integrated with CPU;**
- **DRAM memory: 256 MiB dynamic RAM; data rate: dual-DDR333-166Mhz;**
- **BIOS: 1024KiB SPI-interface flash ROM;**
- **Mass storage: 1024 MiB SLC NAND flash;**
- **Drives: No rotating media.**

# Display

- **Viewing area: 6 x 4 inches;**
- **Two modes: (1) grayscale (B&W) reflective mode (for outdoor use—sunlight-readable); and (2) color backlight Mode (for indoor use);**
- **reflective mode: high-resolution (200 DPI), 1200(H) × 900(V) grayscale pixels, power consumption 0.1–0.2Watts;**
- **backlight mode: built in sub-pixel sampling of the high-resolution display results in approximately 984(H) × 738(V) color pixels, power consumption 0.2–1.0Watts;**

# Display (2)

- **The display-controller chip (DCON) with memory that enables the display to remain live with the processor suspended.**
- **Liquid-crystal display: 7.5" dual-mode TFT display;**
- **The liquid-crystal display is the basis of our extremely low power architecture. The XO is usable while the CPU and much of the motherboard is regularly and imperceptibly turned off and on. Huge power savings are obtained by turning stuff on the motherboard off when it's not being used while keeping the display on.**



# Integrated peripherals

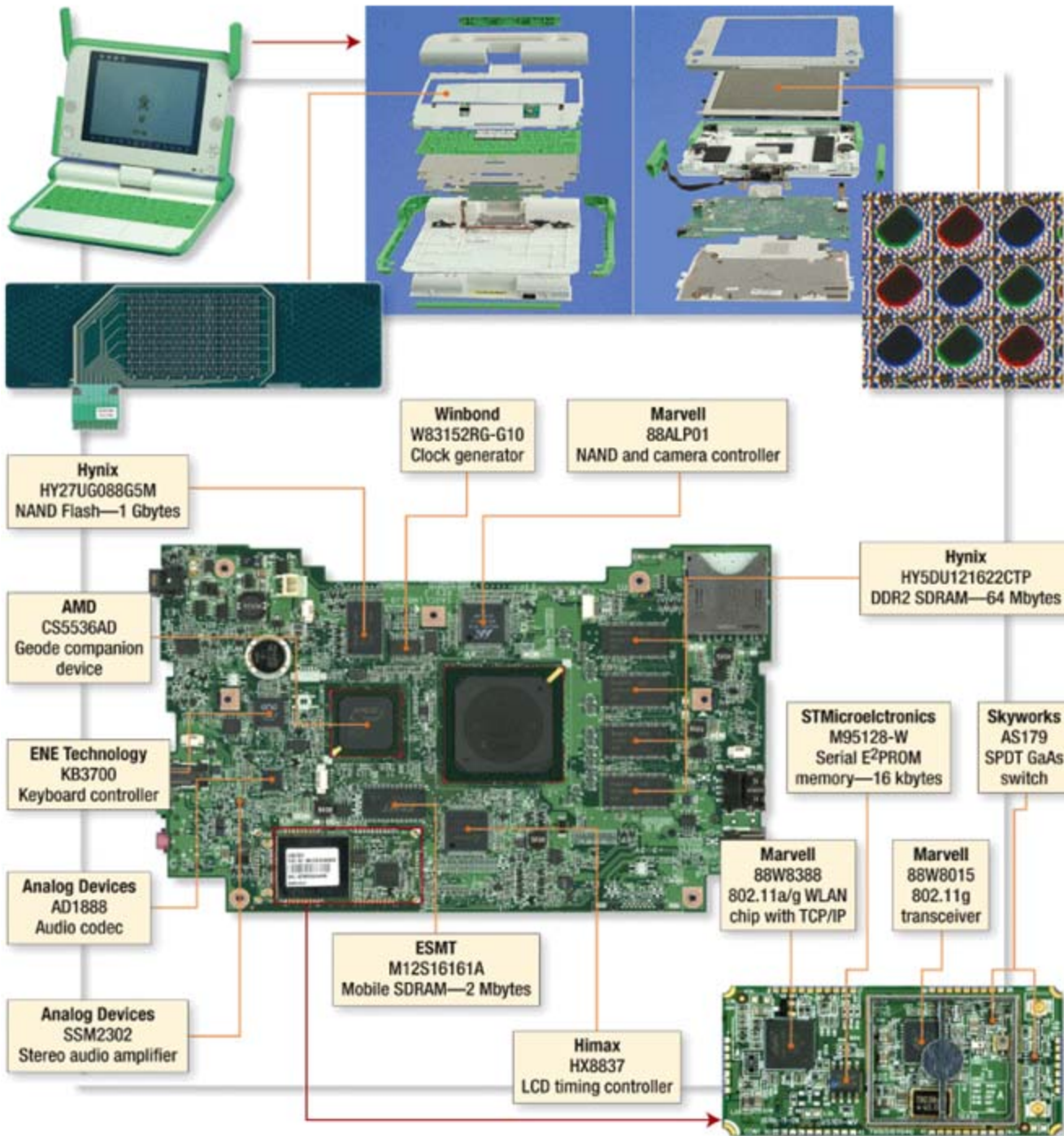
- **Keyboard:** 80+ keys, 1.0mm stroke; sealed rubber-membrane key-switch assembly. Layout pictures for 21 languages;
  - **Gamepad:** Two sets of four-direction cursor-control keys;
  - **Touchpad:** Dual capacitance/resistive touchpad; supports written-input mode [not in G1G1 version];
- Audio:** Internal stereo speakers and amplifier; internal monophonic microphone; jacks for external headphones or microphone;
- **Camera:** integrated color video camera; 640 x 480 resolution at 30 FPS; independent display of microphone and camera recording status;
  - **Wireless Networking:** Integrated 802.11b/g (2.4GHz) interface;
  - **802.11s** s = *spanning tree protocol*. Also called *mesh* networking; dual adjustable, rotating antennas support diversity reception; capable of mesh operation when CPU is powered down;

# Battery

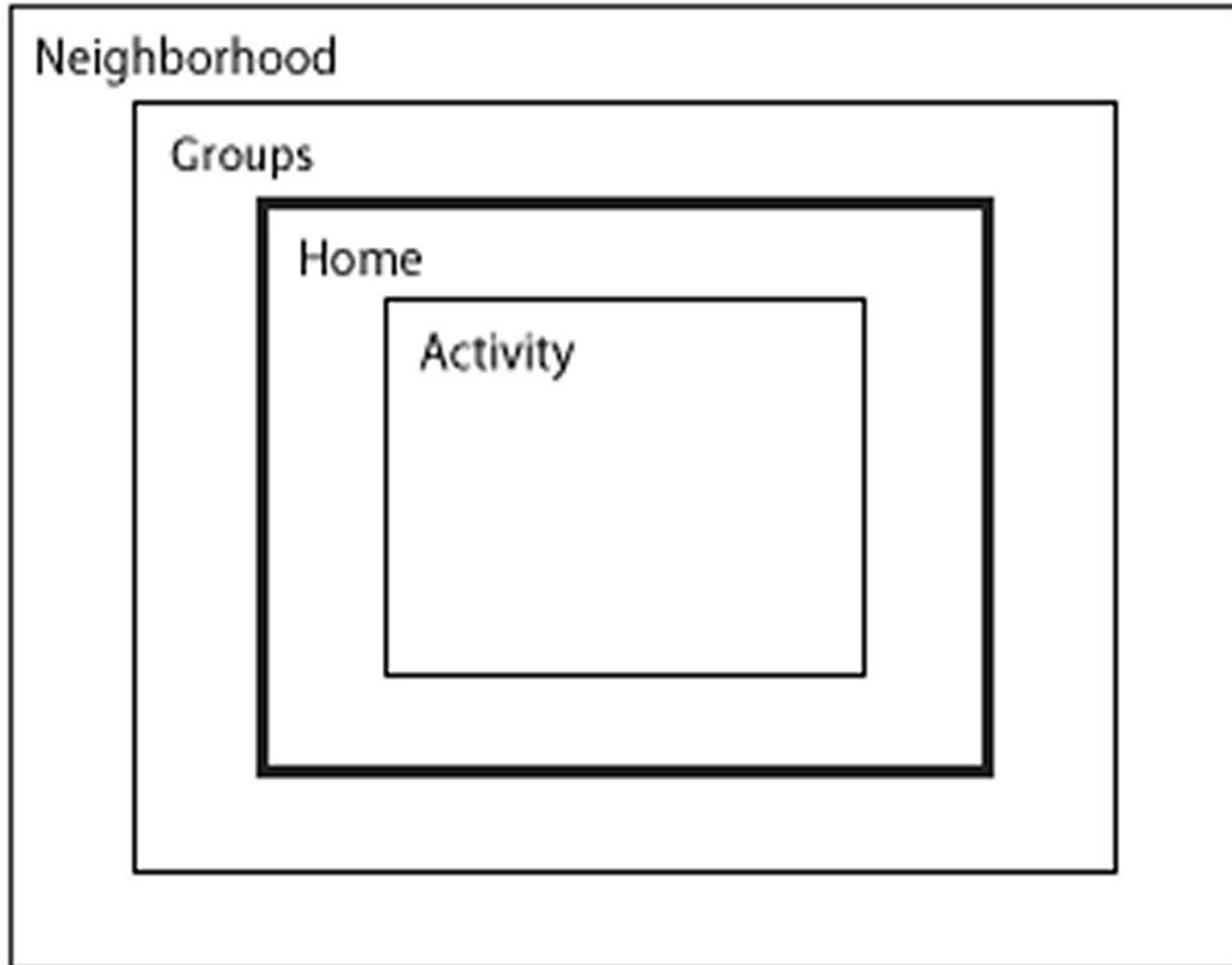
- ***Pack type:*** 2 or 4 cells LiFePO<sub>4</sub> (lithium iron phosphate); or 5 cells NiMH, approx. 6V series configuration;
- ***Capacity:*** 16.5 Watt-hours (NiMH), 22 Watt-hours (LiFeP);
- ***Electronics integrated with the pack provide:***
  - Identification of computer;
  - Battery charge and capacity monitoring chip;
  - Thermal and over-current sensors along with cutoff switch to protect battery;
- **Minimum 2,000 charge/discharge cycles (to 50% capacity of new).**

# External Connectors

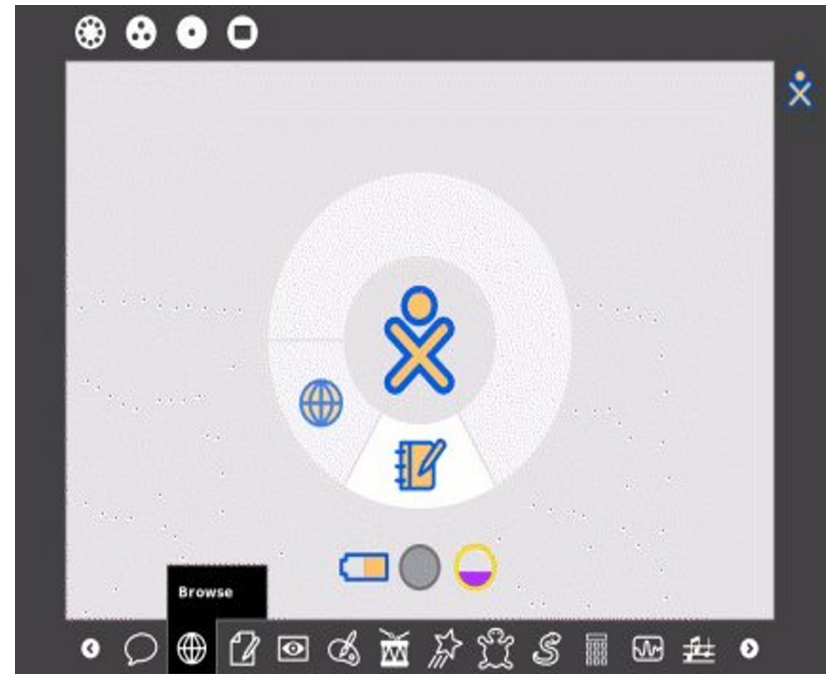
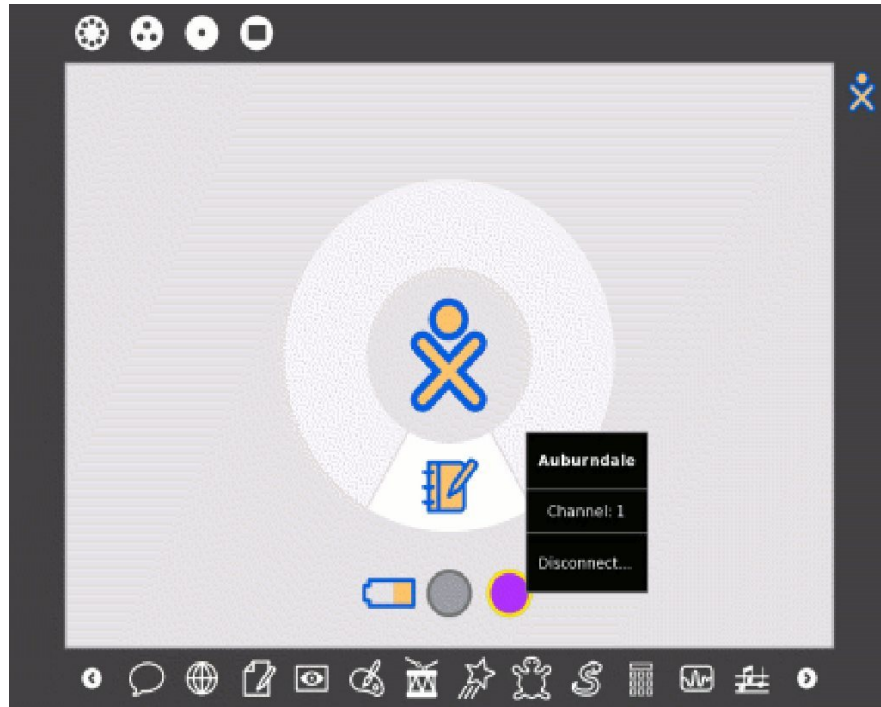
- ***DC power:*** 6mm connector; 11 to 18 V input usable, -32 to +40V input tolerated; power draw limited to 18 W;
- ***Headphone output:*** standard 3.5mm 3-pin switched stereo audio jack;
- ***Microphone input:*** standard 3.5mm 2-pin switched mono microphone jack;;
- ***USB:*** Three Type-A USB 2.0 connectors; Up to 1A power supplied (total);
- ***Flash Expansion:*** SD Card slot. (all G1G1?)



# Child's View of the XO World

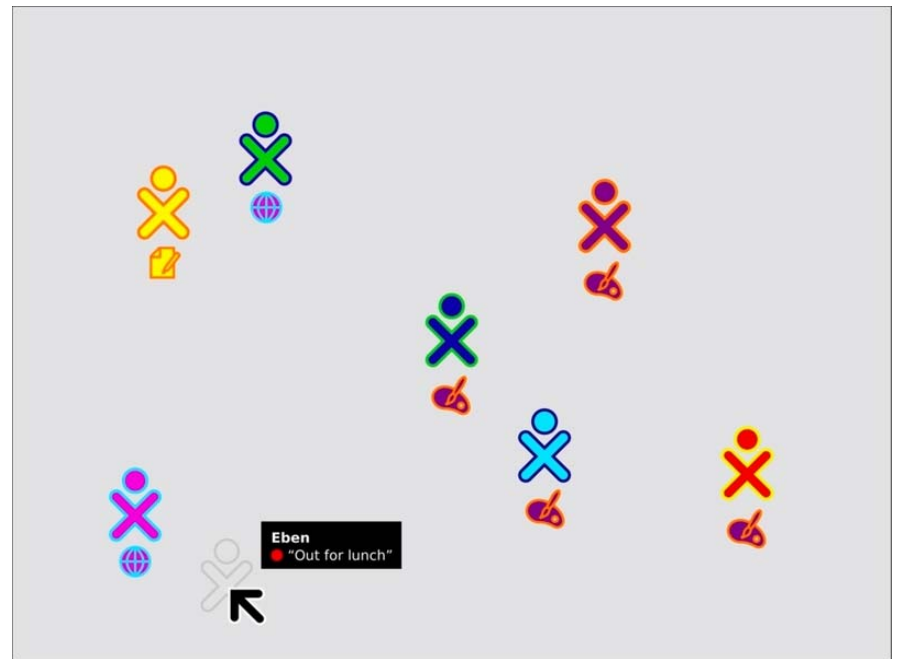
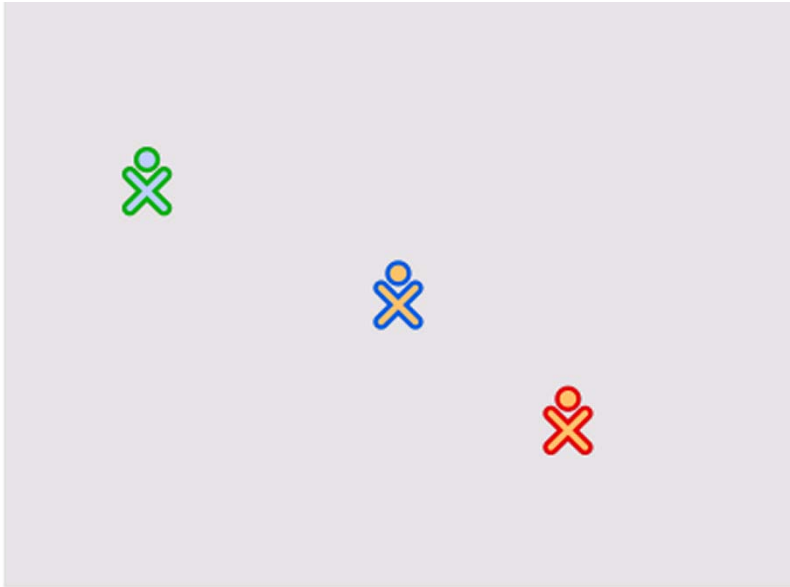


# XO-1 Home View

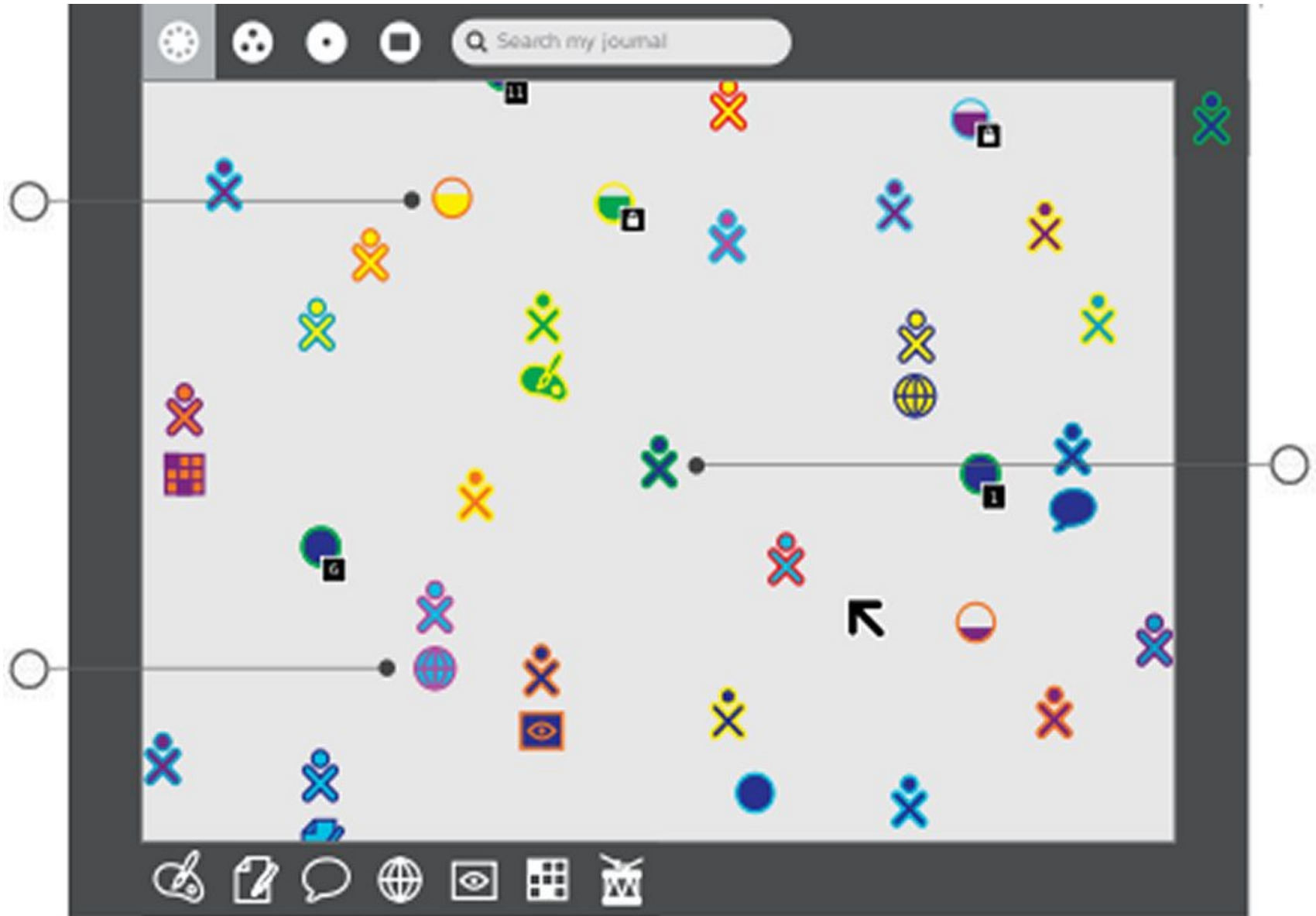




# XO Group View



# Neighborhood View



# G1G1 Activities

- |    |              |    |                  |
|----|--------------|----|------------------|
| 1  | Journal *    | 12 | Terminal         |
| 2  | Chat         | 13 | Measure          |
| 3  | Browse       | 14 | Distance         |
| 4  | Write        | 15 | Memorize         |
| 5  | Record       | 16 | Tam Tam Jam      |
| 6  | Paint/Draw   | 17 | Tam Tam Edit     |
| 7  | Tam Tam Mini | 18 | TamTam Synth Lab |
| 8  | Etoys        | 19 | Analyze          |
| 9  | TurtleArt    | 20 | Log Viewer       |
| 10 | Pippy        | 21 | News Reader      |
| 11 | Calculator   | 22 | Read *           |

# OLPC: The Essential Web Sites

- <http://www.laptop.org/>
- <http://www.laptop.org/en/laptop/>
- [http://wiki.laptop.org/go/The\\_OLPC\\_Wiki](http://wiki.laptop.org/go/The_OLPC_Wiki)
- <http://en.forum.laptop.org>

This presentation has copied images, sentences, words and almost it's total content from OLPC web sites and many other web sites around the world. The presenter thanks all those who recognize their images and thoughts. –Michael Coyne, September 2008, G1G1 XO-1 owner  
SN: SHF8080108F