



TGM
2014



Interactive Computing Devices & Applications Based on Intel® RealSense™ Technology

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Introducing...

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Agenda

- ❖ Perceptual Computing at Intel
- ❖ What's Changed Since TGM 2013
- ❖ Current Products
- ❖ Usages & Hardware
- ❖ Delivery



Perceptual Computing at Intel...1

❖ Activity

- ◆ R&D and productization
- ◆ ~500 people, mostly in California and Israel
- ◆ Not yet a Business Unit (“Corporate Initiative Group”)

❖ Goal

- ◆ Add natural human-machine interface (HMI) senses to computers
 - **Touch**: Input is well-developed, but output (haptics) isn't
 - **Vision** (eyes): Depth information, gestures, emotion/facial expressions, gaze-tracking, context, etc.
 - **Sound** (ears & voice): Dragon Assistant is shipping
 - Bio-sensing: Possibly part of replacing passwords
 - Multi-modal user interfaces
 - Immersive displays



Perceptual Computing at Intel...2

❖ Why?

- ◆ Intel wants to change the world of computers again
 - We did it with the microprocessor, and we did it with “wireless everywhere” (Centrino)
 - 10 years ago, few mobile devices had cameras, now penetration is 100%. We think it’s reasonable that some time in the near future, all cameras will provide depth information

❖ Why?

- ◆ Keep increasing the value of computers to users
- ◆ If computers become ubiquitous and pervasive, we must be able to interact with computing as we do with each other: natural, intuitive, and immersive



Perceptual Computing at Intel...3

❖ What makes Intel different than other companies developing depth-sensing cameras?

- ◆ We're exploring everything you can do with depth, in both user-facing and world-facing environments, not just a single usage model
- ◆ We're miniaturizing depth cameras for mobile devices in size and power consumption
- ◆ We're using multiple technologies (structured light and active & passive stereo 3D, so far)



What's Changed Since TGM 2013?

❖ 2013

- ◆ We started shipping our Perceptual Computing SDK, and the \$149 Creative depth-sensing peripheral camera

❖ Now (2014)

- ◆ Shipping embedded cameras and making lots of progress

❖ Current products

- ◆ **R100** – World-facing “snapshot” depth camera; announced in Dell Venue 8 7000 tablet, shipping in November 2014
- ◆ **F200** – User-facing depth camera, currently shipping in 2-in-1s, All-in-Ones, etc.
- ◆ **R200** – World-facing depth camera (60 fps video), shipping in 1Q-2015



Intel RealSense Depth-Sensing Technology



Color Image



Depth Image



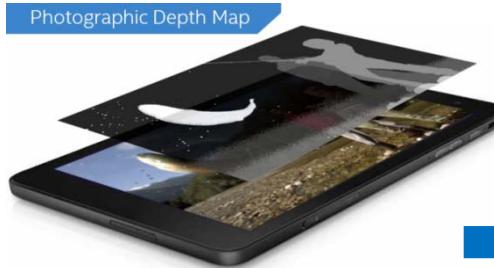
Dell Venue 8 7000 with R100 World-Facing Depth Camera



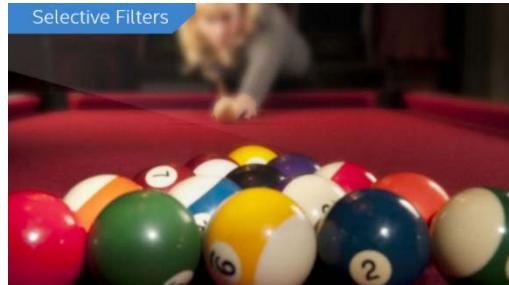
- ◆ 8.4" 2560x1600 OLED display
- ◆ 6 mm thickness, 0.7 lbs.
- ◆ 8 MP WF camera
- ◆ 2 x 720p depth imagers
- ◆ Post-processing



R100 Usages



Photographic Depth Map



Selective Filters

High-definition depth-map optimized for mobile photography

Change focus,
lighting and color
with the touch
of a finger



Measure distances
in a photo



Create photos with
motion effects



F200 User-Facing Depth Camera



F200 Usages

Immersive Collaboration/
Creation



Gaming and Play



Interact Naturally



Learning and Edutainment



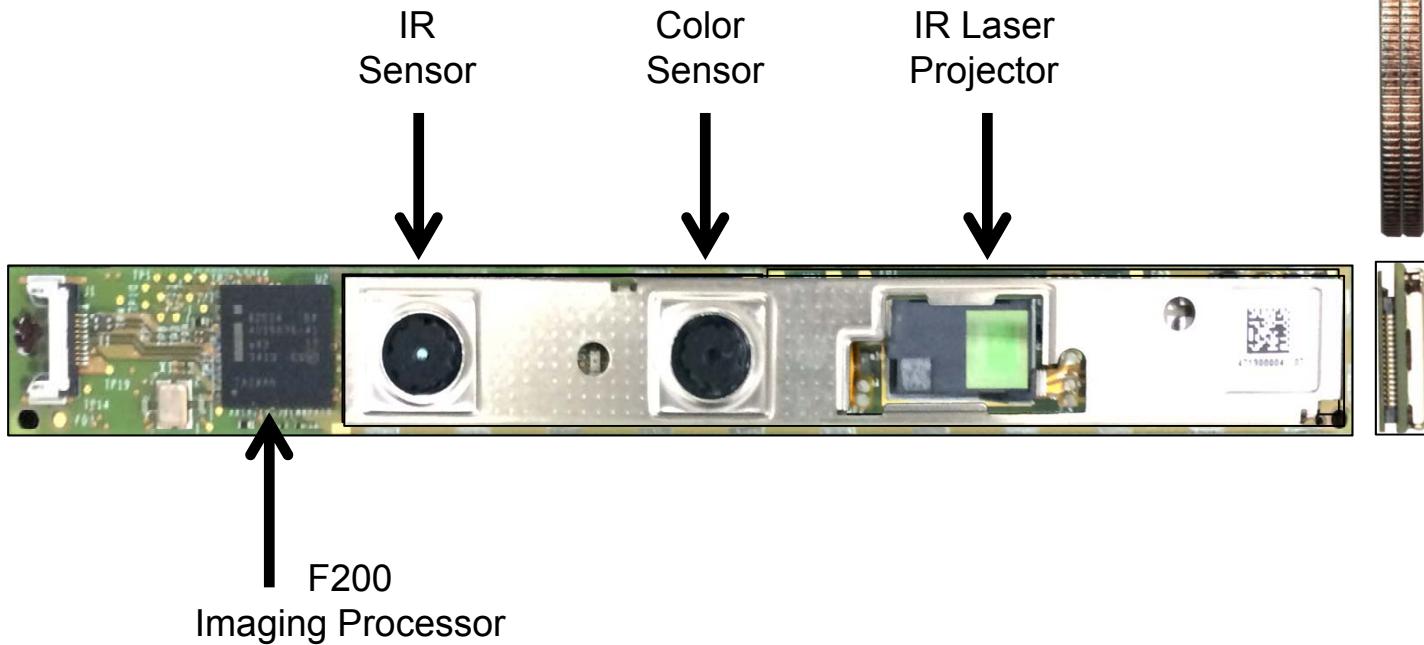
Capture and Share



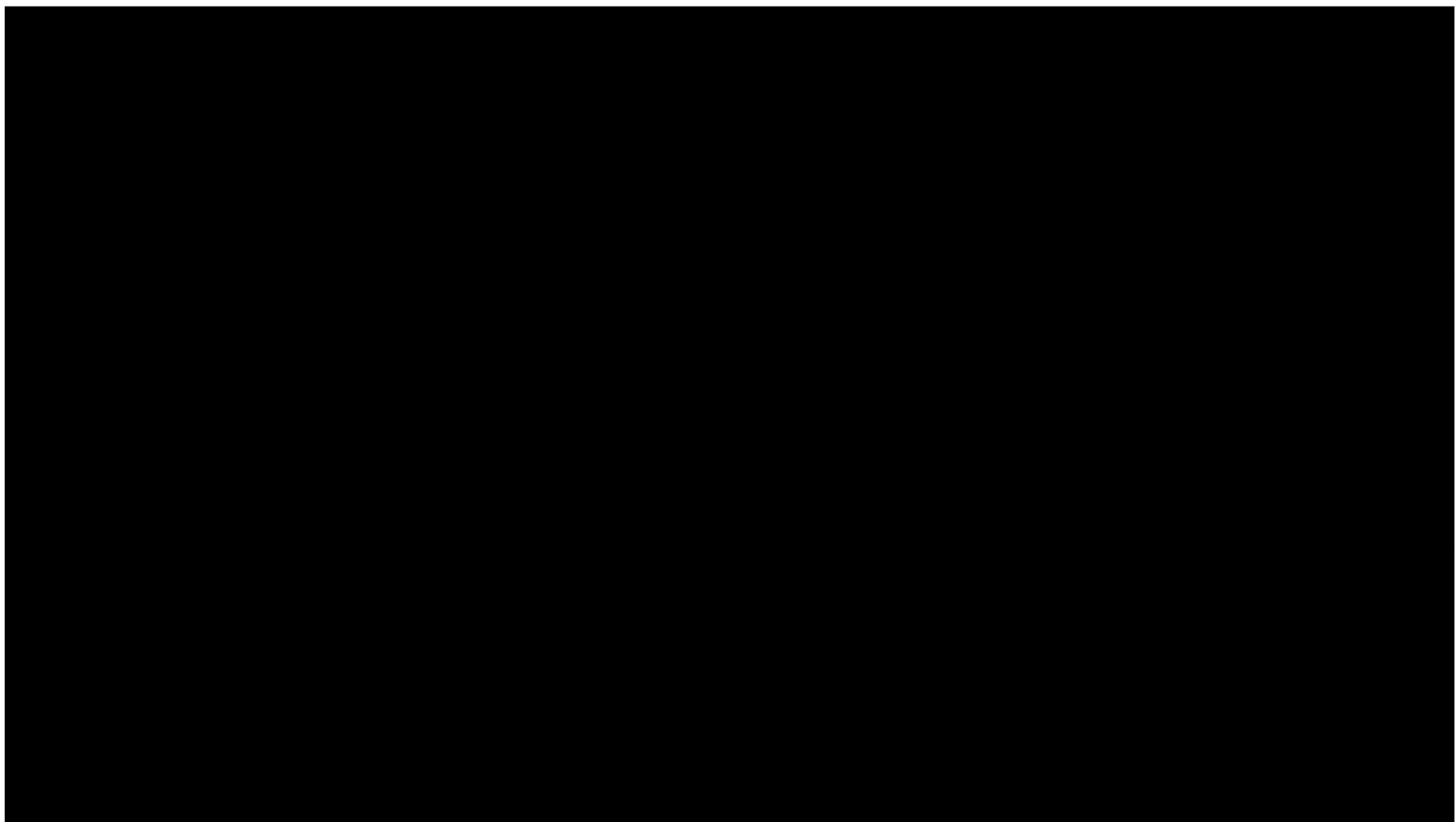
Broad Enabling



F200 Hardware



R200 World-Facing Depth Camera



R200 Usages

Capture the World in 3D



Enhanced Photo & Video



Immersive Gaming



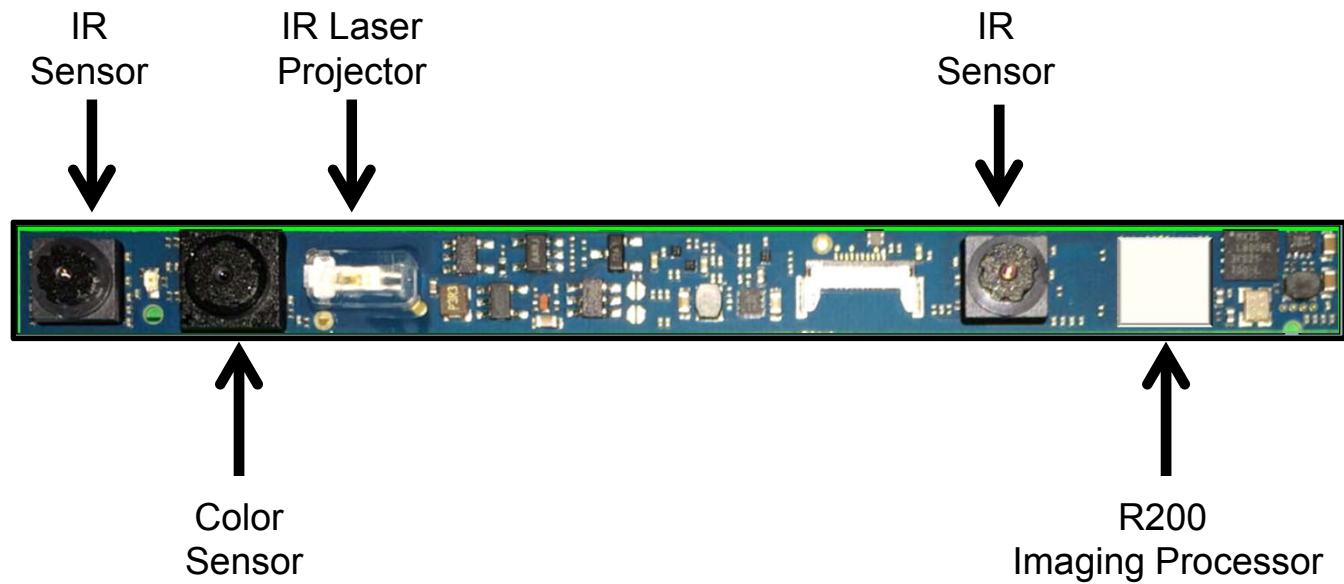
Learning Education &



Collaboration



R200 Hardware



❖ 100 mm x 9 mm x 3.8 mm



Delivery

- ❖ Intel RealSense camera-enabled devices
- ❖ Intel RealSense SDK
- ❖ Ecosystem scale and applications
- ❖ Marketing and awareness



OEM Momentum



ASUS *acer* **NEC** **DELL** **hp** **FUJITSU** **lenovo** **TOSHIBA**



ISV Momentum



Strong ISV momentum, tracking 60+ applications and more coming



Intel RealSense App Challenge 2014

The screenshot shows a web browser window for the Intel RealSense App Challenge 2014. The URL in the address bar is <https://realsenseappchallenge.intel.com/landing/>. The page features the Intel RealSense logo and the text "APP CHALLENGE 2014". A large image of a woman interacting with a transparent screen displaying a globe is the central focus. Below the image, the text "Developer Contest" is displayed. A message states: "Registration is now closed. Thank you to the thousands of developers who are a part of Phase 1. Participants may Login to their profiles to view their submissions. Results of Phase 1 will be announced around the middle of November 2014." A blue "LOGIN" button is located on the left. At the bottom, there are links for "HOME", "CHALLENGE OVERVIEW", "TECH OVERVIEW", "CATEGORIES", and "LOGIN". The browser's toolbar and menu bar are visible at the top.

**\$1 Million
in prizes!**

[www.realsenseappchallenge.intel.com](https://realsenseappchallenge.intel.com)



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