



Introducing Intel™ RealSense® Robotics Perception Devices

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Last year...

Amit showed you our exciting new Intel® RealSense™ 3D
Camera R200



Announced new Intel® RealSense™ Technology

Intel® RealSense™ 3D Camera R200 / LR200

- Depth camera enabling optimized for Robotics computer vision capabilities



Intel® RealSense™ 3D Camera SR300

- Close range depth camera optimized for Background Segmentation and Facial Tracking



Intel® RealSense™ 3D Camera ZR300

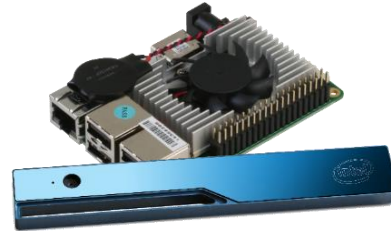
- Adds 6DOF / SLAM capabilities to LR200 camera



Released new Robot Development Platforms



Intel® NUC



Intel® Robotic Developer Kit

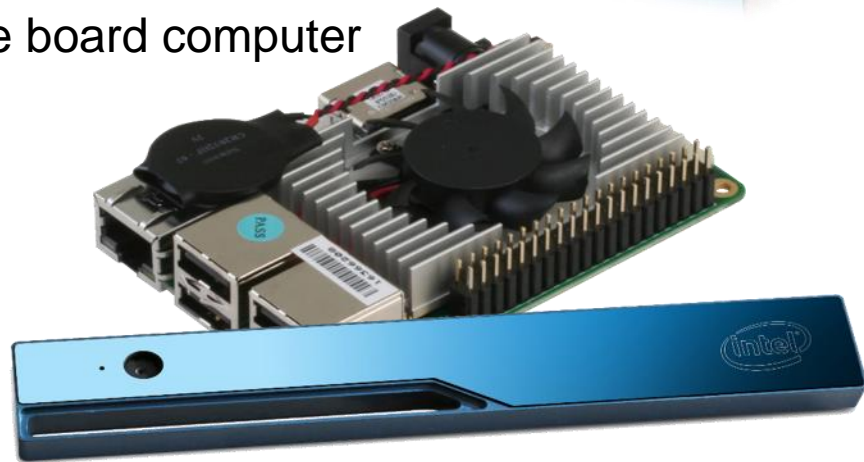


Intel® Joule

Intel® RealSense™ Robotic Development Kit

Kit contains:

- Intel® RealSense™ 3D camera R200
- Intel® Atom™ x5-Z8350 processor single board computer
 - 40-pin general purpose I/O interface
 - USB 3.0 OTG and USB 2.0
 - Full-speed gigabit Ethernet
 - HDMI*
- Open source with support for Ubuntu*
- Power supply and cables



Everything you need to equip your robot with advanced depth vision

Intel® Joule™ Developer Kit



- Development platform for rapid prototyping and easy transition to volume production (SOM)
- Higher performance, lower power consumption, in a smaller form factor
- Wi-Fi* and Bluetooth*, 4K video, MIPI CSI & DSI, up to 48 GPIO
- Multiple OSs supported, including reference Linux* IoT OS, Ubuntu*, Snappy, and Windows* IoT Core
- Enhanced support for Intel® RealSense™ technology
- Developer kit includes module, expansion board, Wi-Fi antennas, USB cable, and SD card with software

Rapid prototype-to-production for robotics development

Released as Open Source

- Released an open source interface for Linux*, MacOS*, and Windows*
- Released an open source ROS* camera node



<http://wiki.ros.org/RealSense>

Added Intel® RealSense™ Support for Turtlebot*

Support for Turtlebot, for
ROS* Indigo and ROS Kinetic,
packaged in ROS build farm



And Worked With Great Partners...



ASUS®



ninebot®
Personal Transportation Robot



savioke



ROBOTIS
THORMANG3



TurtleBot™



ROBOTIS OP
RA-3 Collaboration with DARPA Project by NSF



Intel® Euclid™

Compute-Communicate-Sense

*The product, product specifications and data may be subject to change without notice

Intel® Euclid™ - Highlights



Robotician/Makers vision solution

**Complete
Standard/Community
Easy to use/ “zero-installation”**

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Roboticist/Makers vision solution

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Disclaimer
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Intel® Euclid™ - Highlights



Robotician/Makers vision solution

Complete

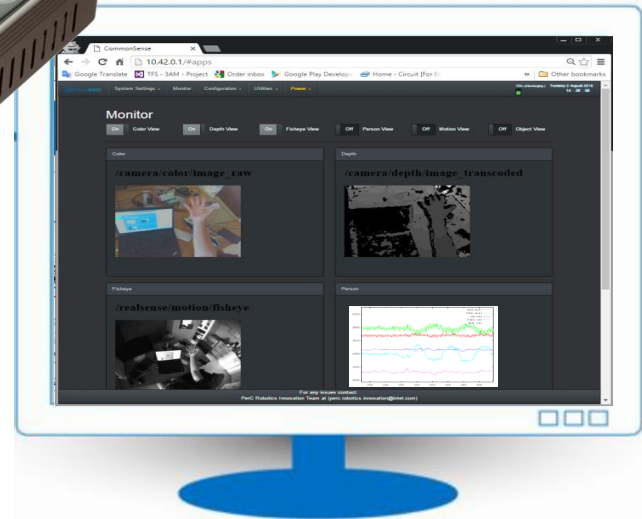
Standard/Community

Easy to use/ "zero-installation"

ubuntu^{*} 16.04

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Intel® Euclid™ - Highlights



Roboticist/Makers vision solution

Complete
Standard/Community

Easy to use/ “zero-installation”

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10.42.0.1/#apps

7

System Settings ▾

Monitor

Configuration ▾

Utilities ▾

Tuesday 21 June 2016

09 : 42 : 23

86%

Monitor

On

Color View

For any issues contact:
PerC Robotics Innovation Team at
(perc.robotics.innovation@intel.com)

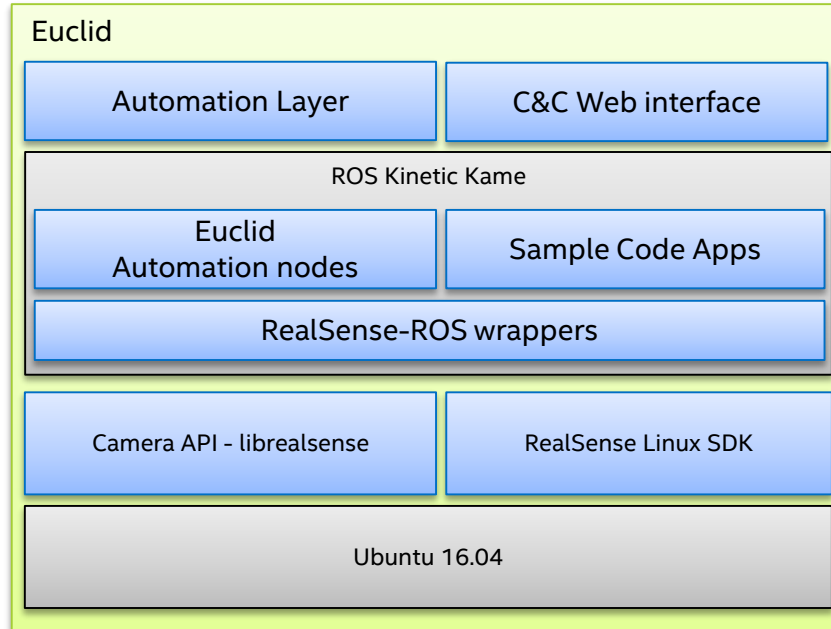
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0.7KB/s

Intel® Euclid™ – High Level Software components



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Intel® Euclid™ - C&C Web interface

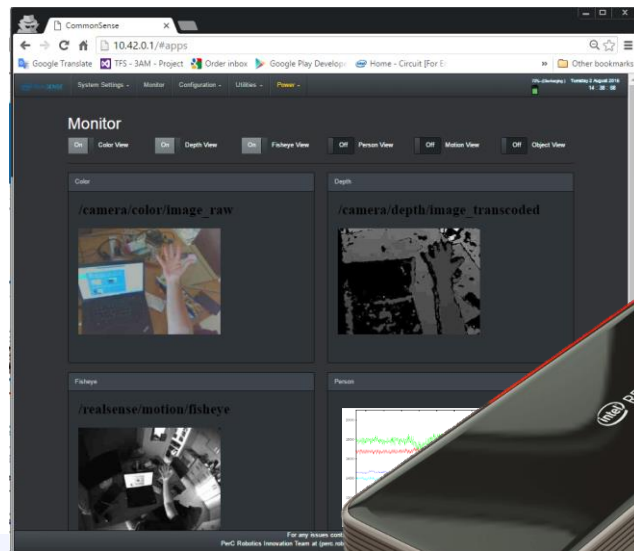
ROS –

javascript interface

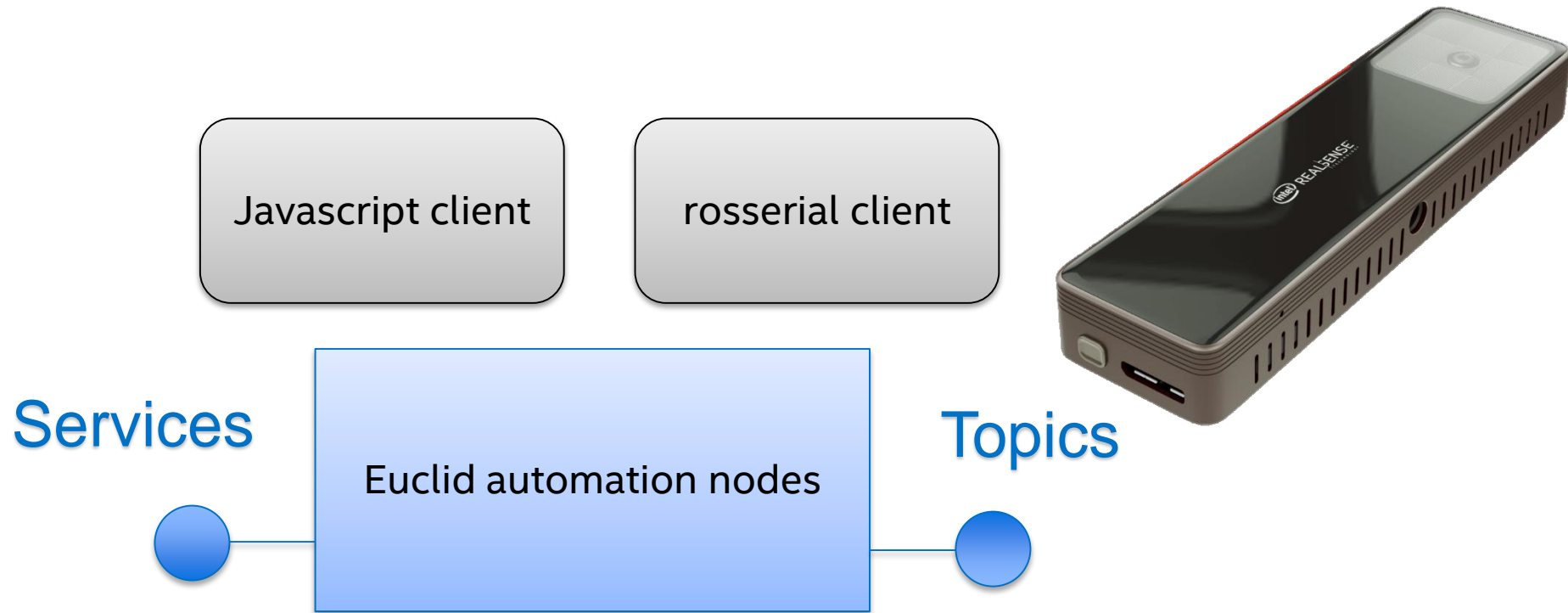
video web server

log system

```
//  
register: function () {  
  var self = this;  
  nodes_listener = new ROSLIB.Topic({  
    ros: ros,  
    name: '/nodes_status',  
    messageType: 'configuration_node/NodesS  
  });
```



Intel® Euclid™ - C&C Web interface



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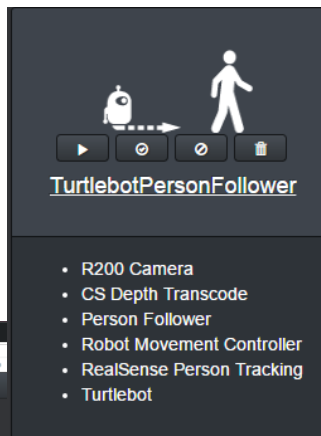
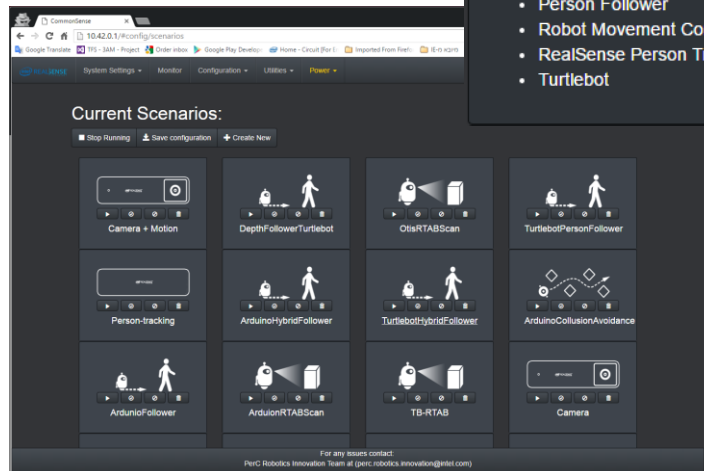


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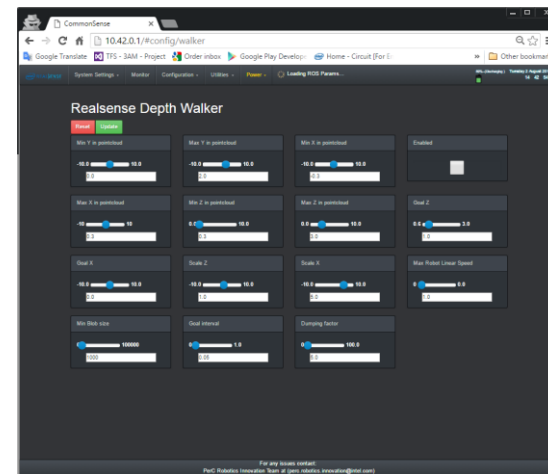
Intel® Euclid™ - C&C Web interface



Scenarios



Dynamic Reconfigure



ROS nodes configuration standard

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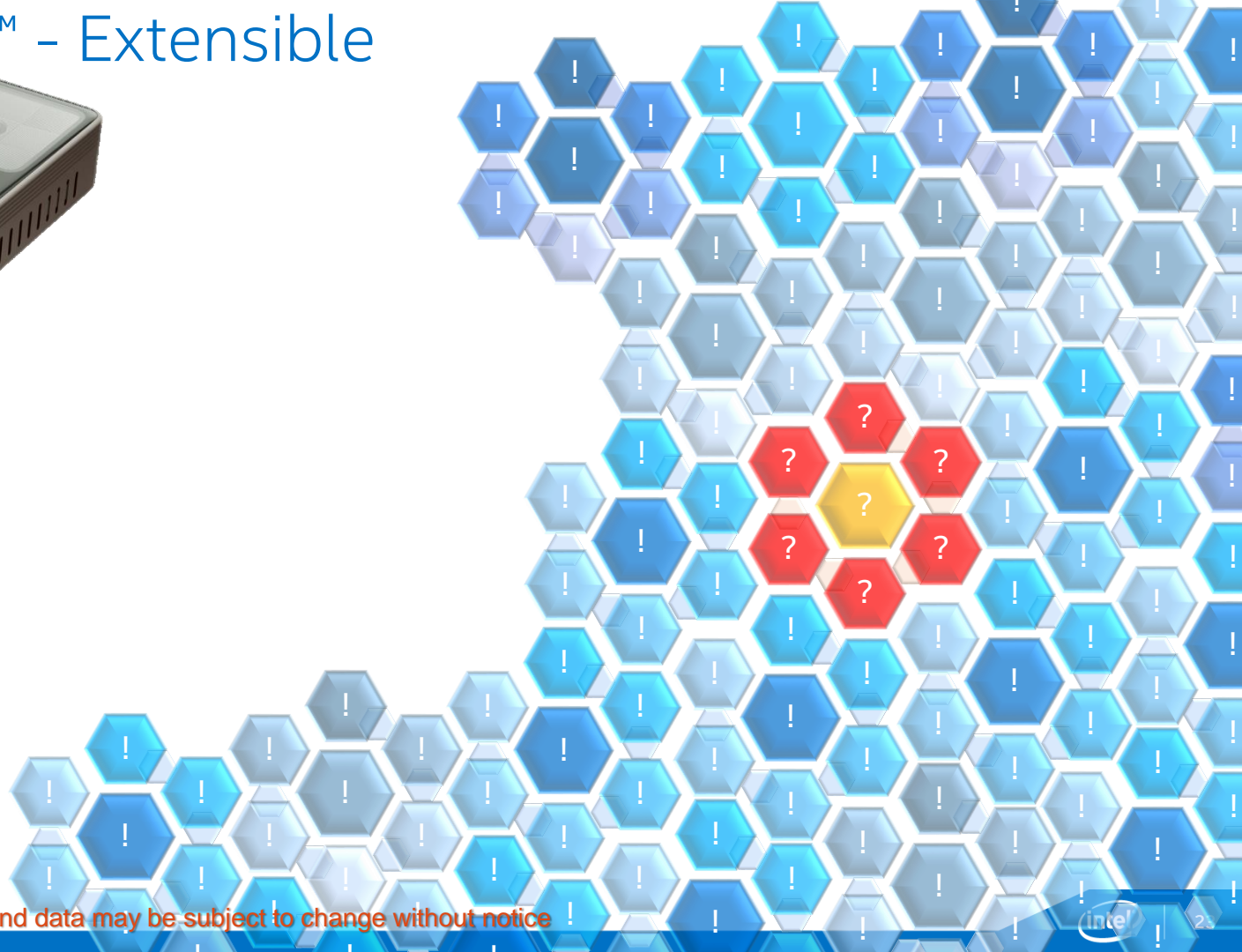
Intel® Euclid™ - Arduino* compatibility



- **Web interface integration**
 - Regenerate the Arduino libraries remotely from web interface
 - Run rosserial from the web interface
- **Start, edit and stop scenarios from Arduino**

Based on *rosserial* and *rosserial_arduino* libraries which allow any communication of ROS messages from a host computer to an Arduino device.

Intel® Euclid™ - Extensible



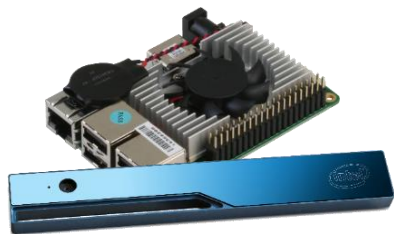
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Intel® Euclid™

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Thank You!
Learn more at our booth!