

A better introduction to ROS with ...

Ilia Baranov
Tony Baltovski

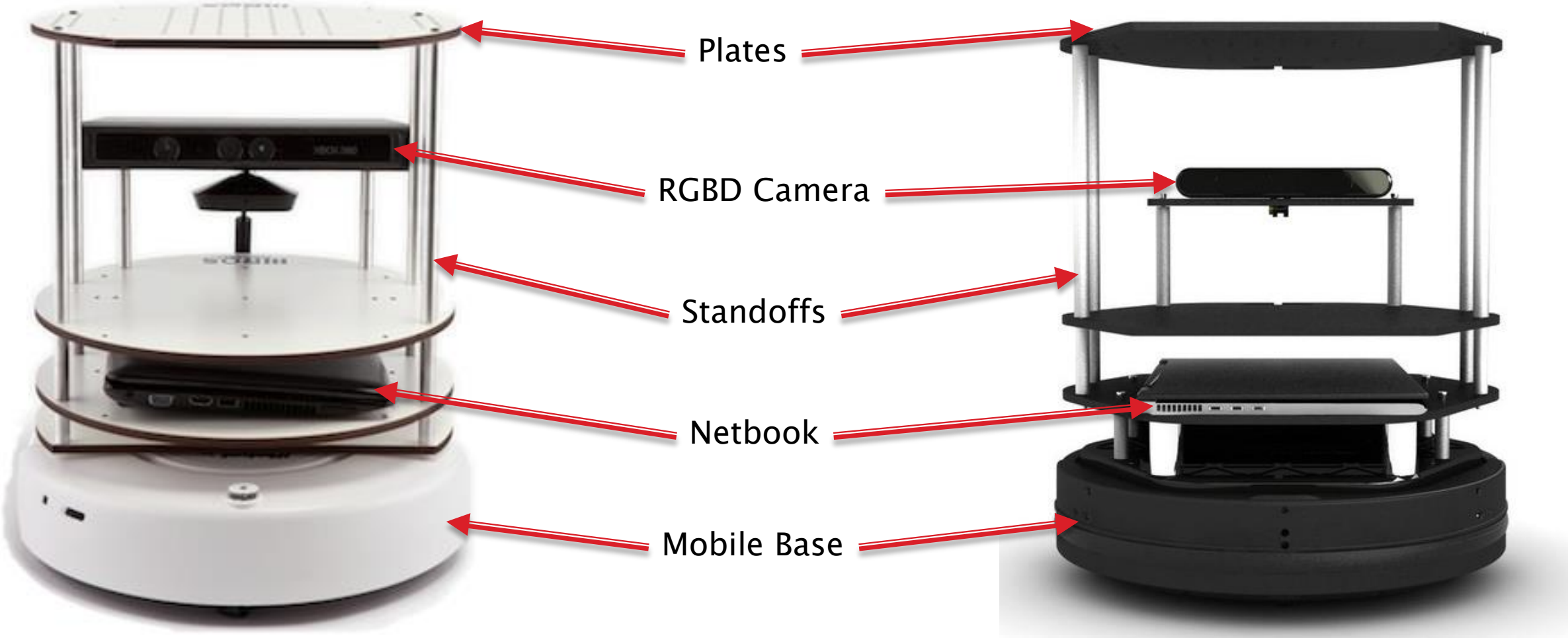




History



Turtlebot Anatomy

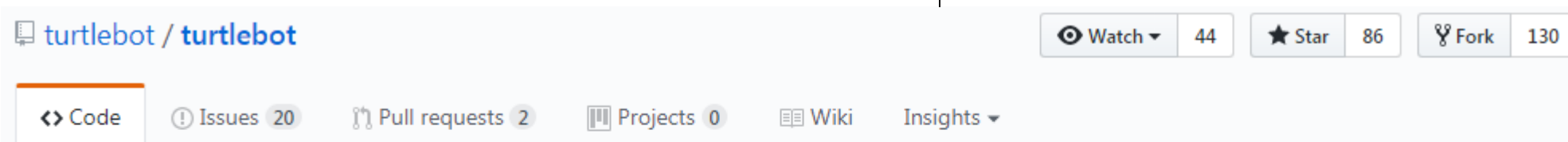


Doing Well

- Preassembled turn-key solution for ROS
- Low-cost
- Huge community
- Plenty of tutorials
- Many demos

Needs Improvement

- Netbooks!
- No standard computer hardware
- No UI
- Start with command line
- Linux networking



turtlebot / turtlebot

Watch 44 Star 86 Fork 130

Code Issues 20 Pull requests 2 Projects 0 Wiki Insights

The turtlebot stack provides all the basic drivers for running and using a TurtleBot. <http://www.ros.org/wiki/turtlebot>



1,121 commits 11 branches 92 releases 28 contributors

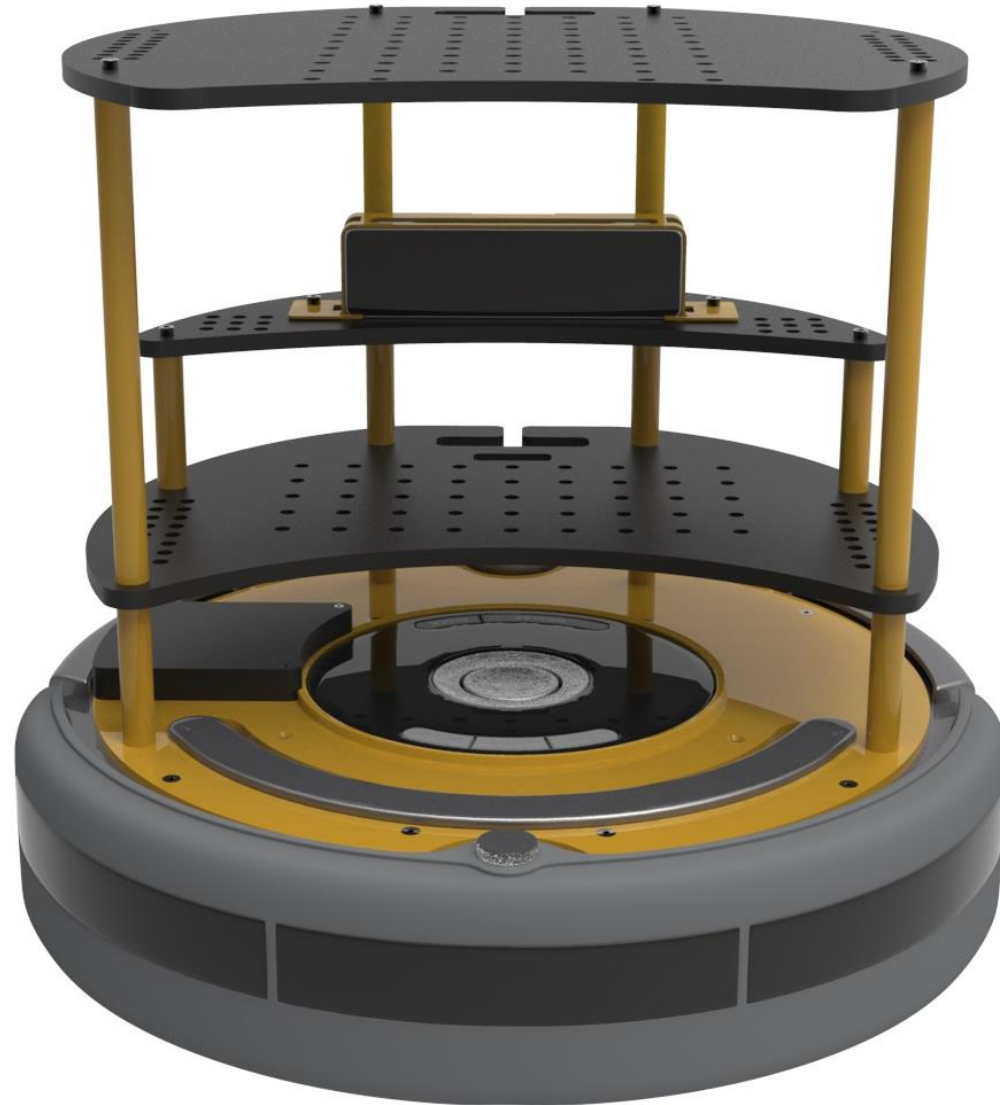
Clearpath knows Turtlebots



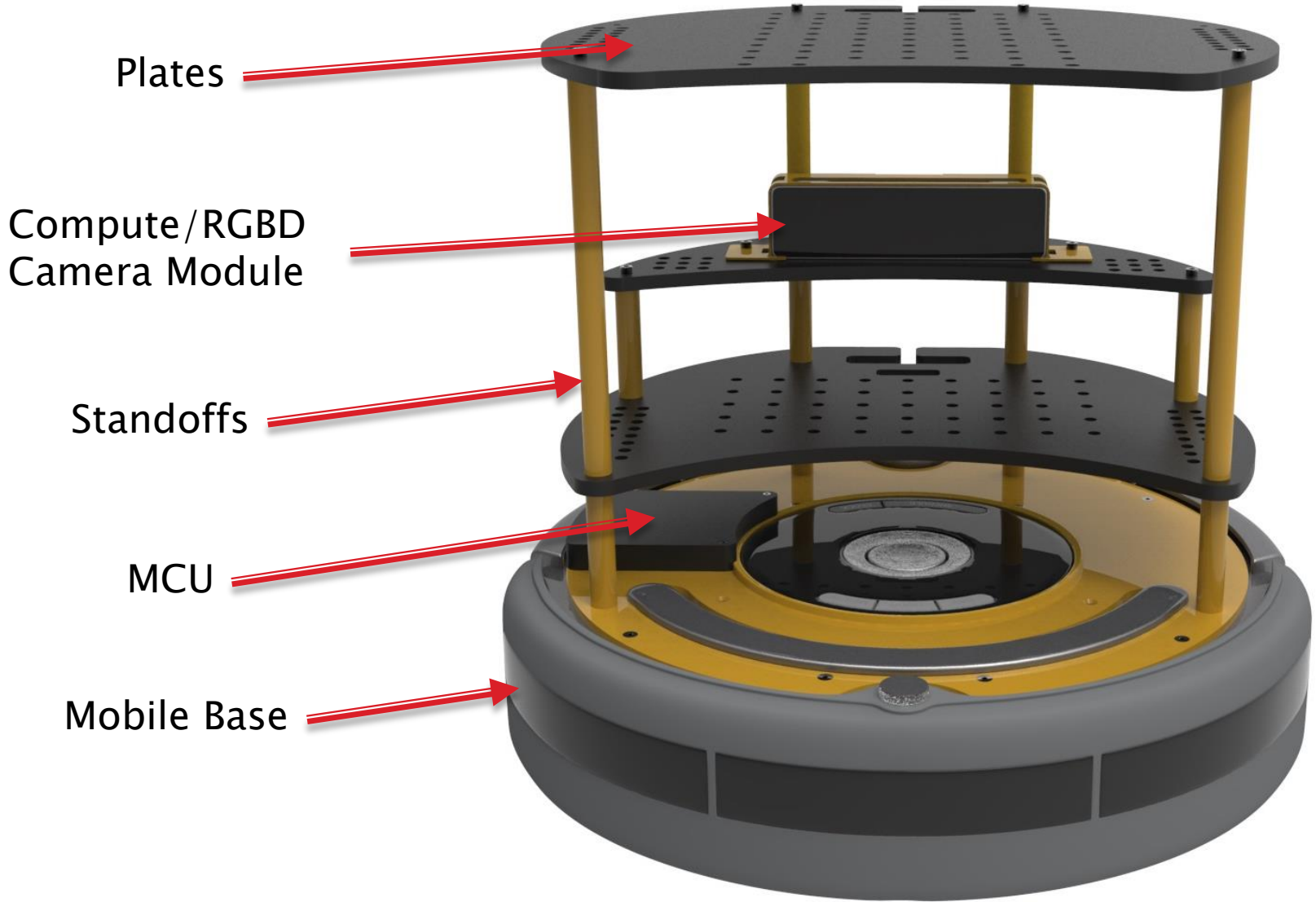
- Sales started in 2011
- Averaging over 200 units per year
- 70% are preassembled



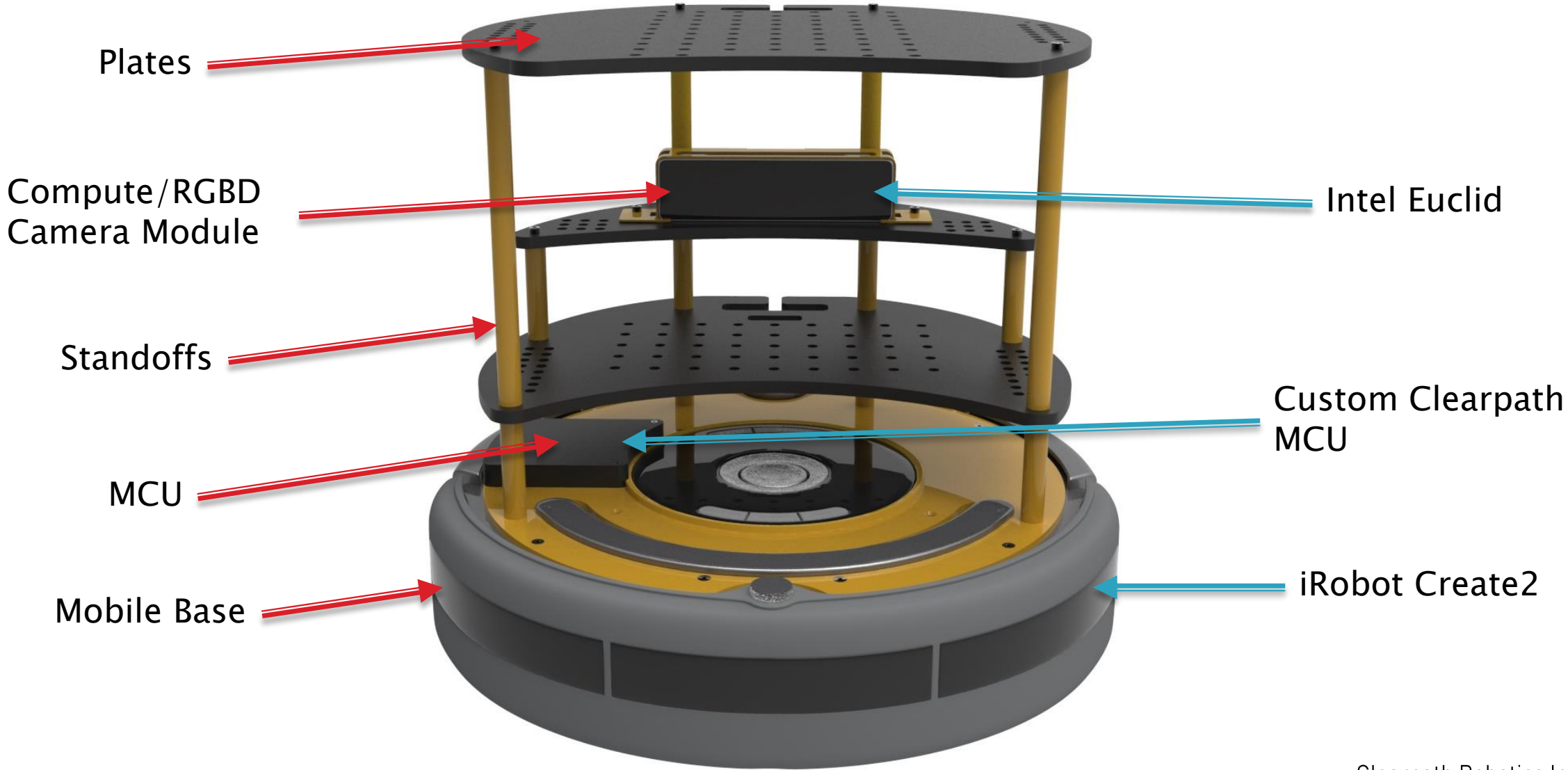
Turtlebot Euclid



Turtlebot Euclid Anatomy



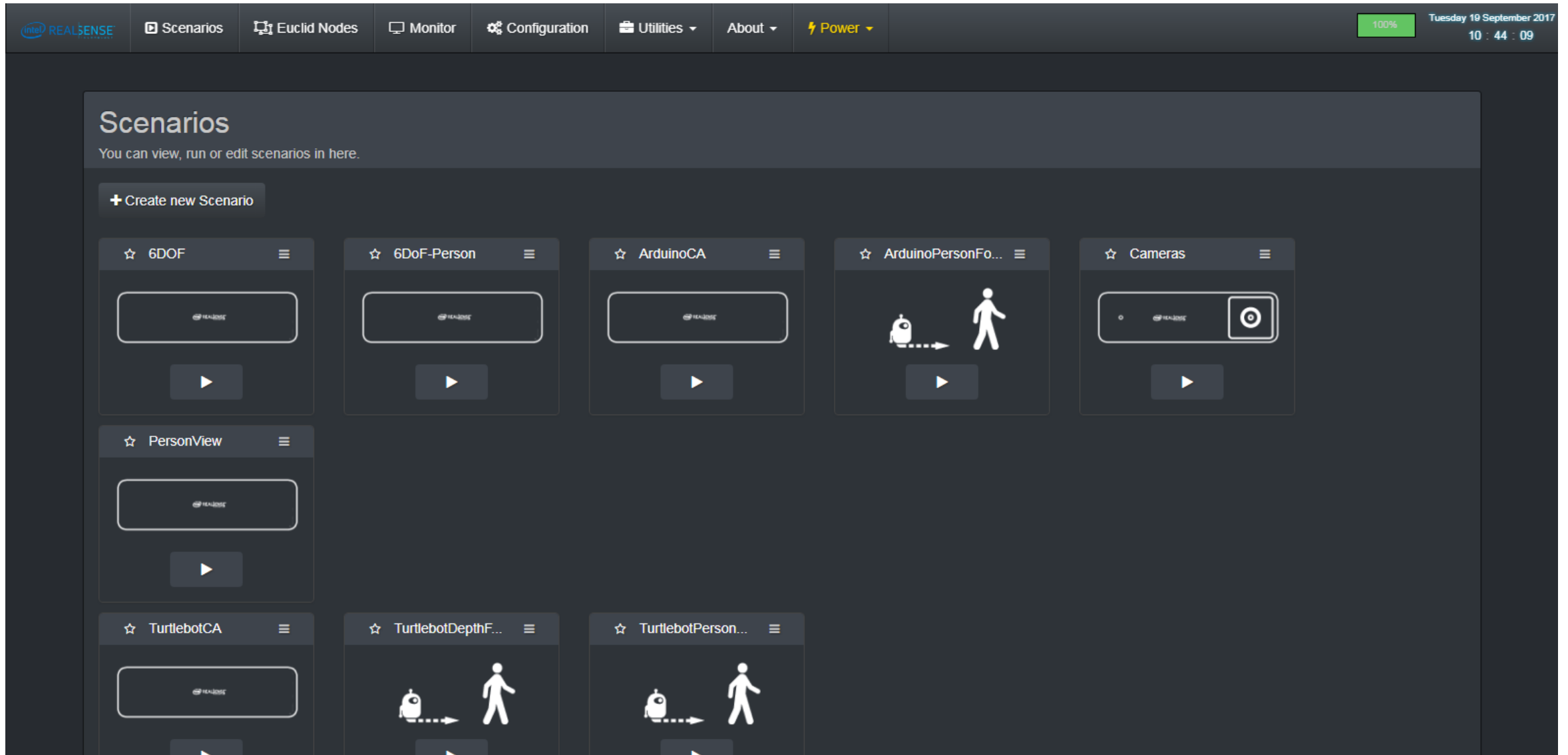
Turtlebot Euclid Anatomy



- Intel Atom x7-8700 Quad-Core processor with 4GB RAM, 32GB storage
- Intel RealSense ZR300 Depth Camera components
- Wi-Fi, Bluetooth, USB 3.0, Micro HDMI, and USB OTG/Charging ports
- Inertial measurement unit, barometric pressure sensor, GPS, and proximity sensor
- Battery and Power cable backpacks
- **Pre-installed** Ubuntu 16.04, ROS Kinetic and RealSense depth camera middleware



Intel Euclid UI & AP

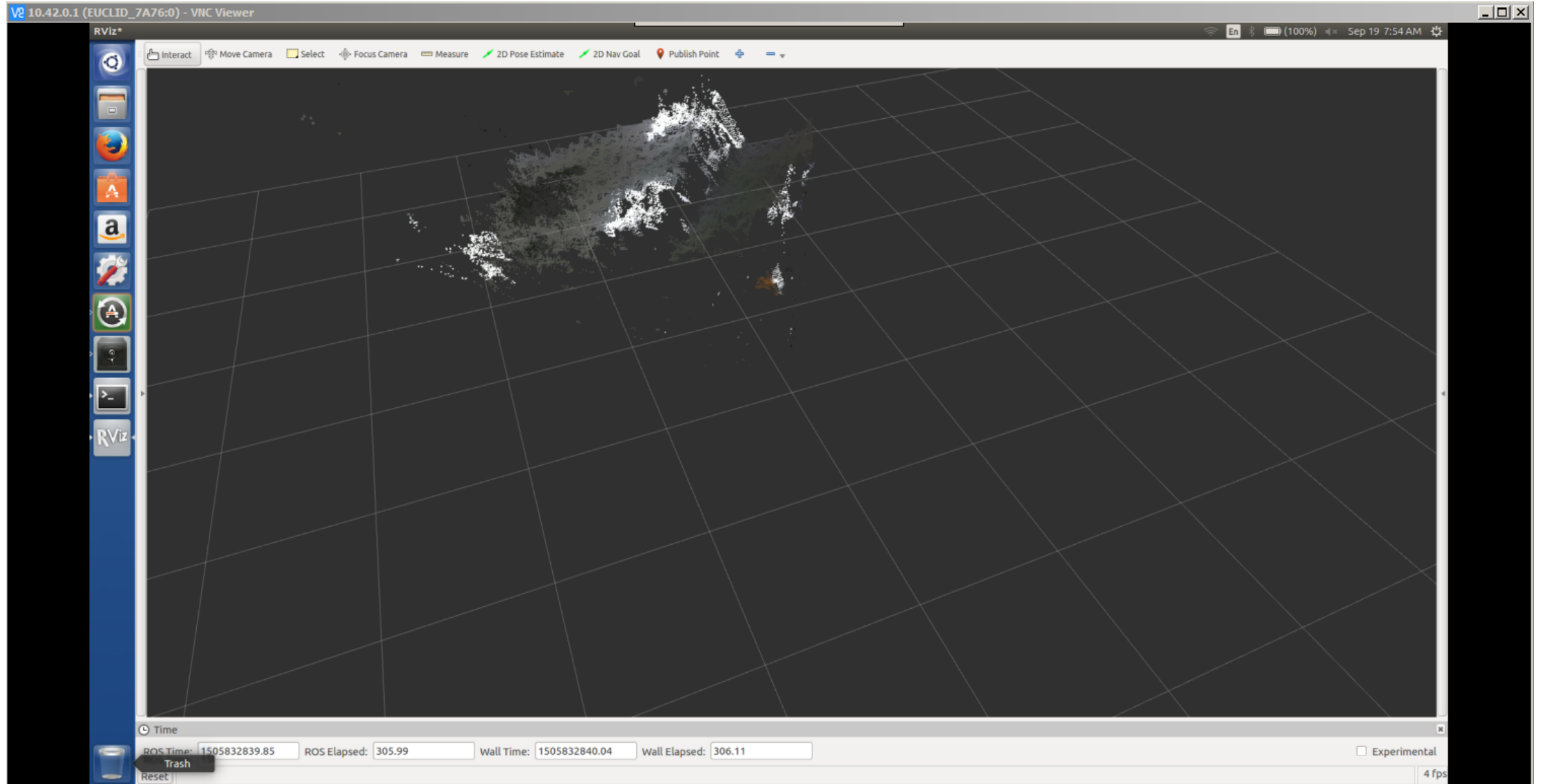


The screenshot displays the Intel Euclid UI & AP interface. At the top, a navigation bar includes the Intel RealSense logo, menu items for Scenarios, Euclid Nodes, Monitor, Configuration, Utilities, About, and Power, a 100% battery indicator, and the date and time: Tuesday 19 September 2017, 10:44:09.

The main content area is titled "Scenarios" and contains the text "You can view, run or edit scenarios in here." Below this is a "+ Create new Scenario" button. The dashboard features eight scenario cards, each with a star icon, a title, a menu icon, a thumbnail image, and a play button:

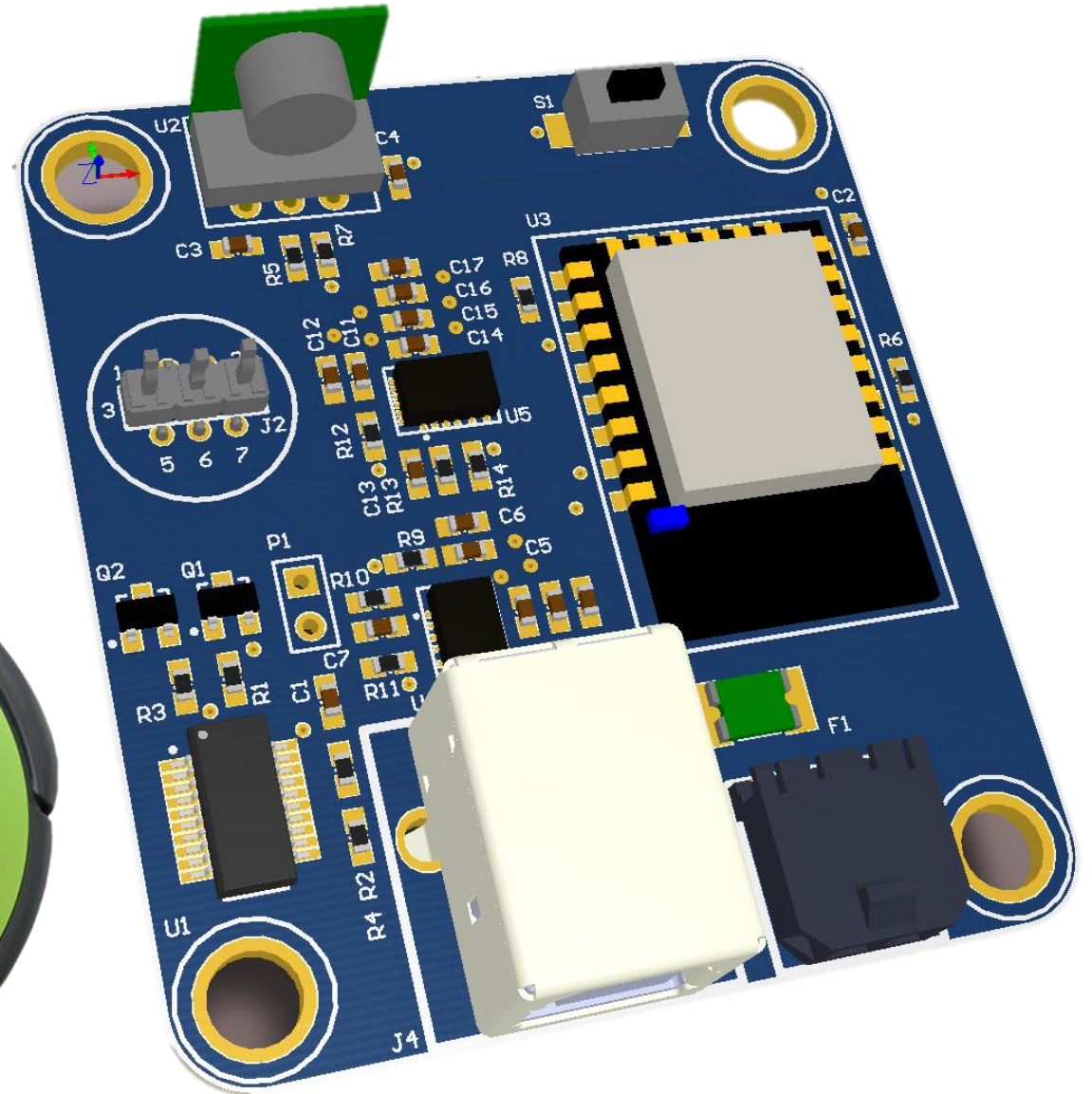
- 6DOF**: Thumbnail shows a rectangular frame with the Intel RealSense logo.
- 6DoF-Person**: Thumbnail shows a rectangular frame with the Intel RealSense logo.
- ArduinoCA**: Thumbnail shows a rectangular frame with the Intel RealSense logo.
- ArduinoPersonFo...**: Thumbnail shows a robot icon with a dashed arrow pointing towards a person icon.
- Cameras**: Thumbnail shows a rectangular frame with the Intel RealSense logo and a camera icon.
- PersonView**: Thumbnail shows a rectangular frame with the Intel RealSense logo.
- TurtlebotCA**: Thumbnail shows a rectangular frame with the Intel RealSense logo.
- TurtlebotDepthF...**: Thumbnail shows a robot icon with a dashed arrow pointing towards a person icon.
- TurtlebotPerson...**: Thumbnail shows a robot icon with a dashed arrow pointing towards a person icon.

Intel Euclid



Create 2 Interface

- ESP8266 based microcontroller
- Serial interface to Create 2
- Provides power to the Euclid from the Create 2's battery
- State management of the Create 2
- User power breakout
- roserial to Euclid
- Uses ros_control



The gentle ROS intro with the TTBe

- Quick start with AP
- Controlled by UI
- Preconfigured with all software
- VNC server

