

CPVR 2013 Tutorial

Towards Solving Real-World Vision Problems with RGB-D Cameras

Kinect for Windows SDK+Toolkit

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Microsoft



KINECT[™]
for Windows[®]



Before I Forget...

- Lots of people helped to create the content for this presentation...
 - Not only from K4W, but also DPE, Xbox, MSR, etc.

Kinect for Windows releases

- 1.0: Feb/01/2012
- 1.5: May/21/2012
- 1.6: Oct/04/2012
- 1.7: Mar/18/2013
- Future
 - 1.X investment
 - New sensor

Environment Differences...

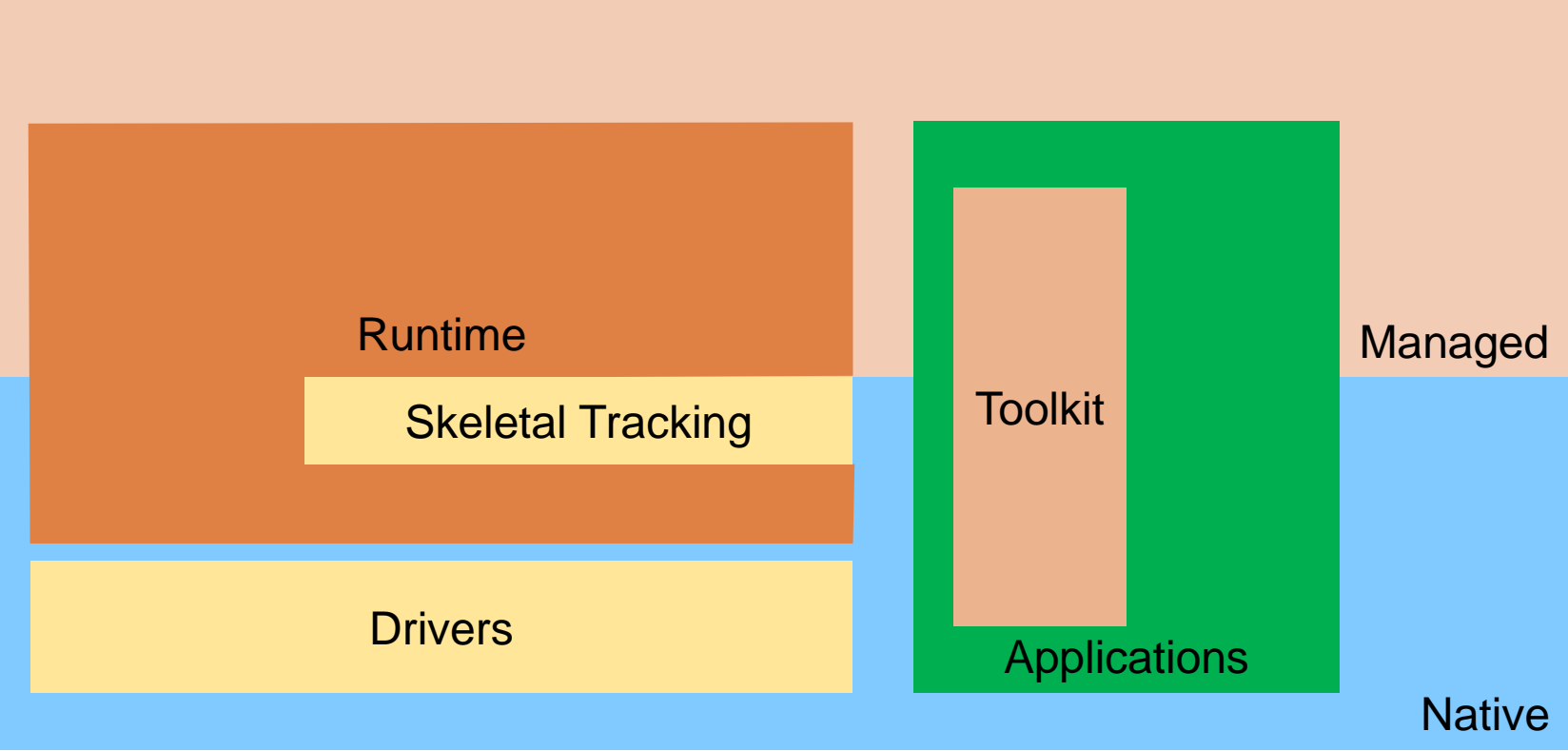
Xbox

- Known CPU: PPC
- Known bus
- 1 device per machine
 - Only 1 supported
- Known architecture
- Known GPU
- Selected audience
- Mainly games

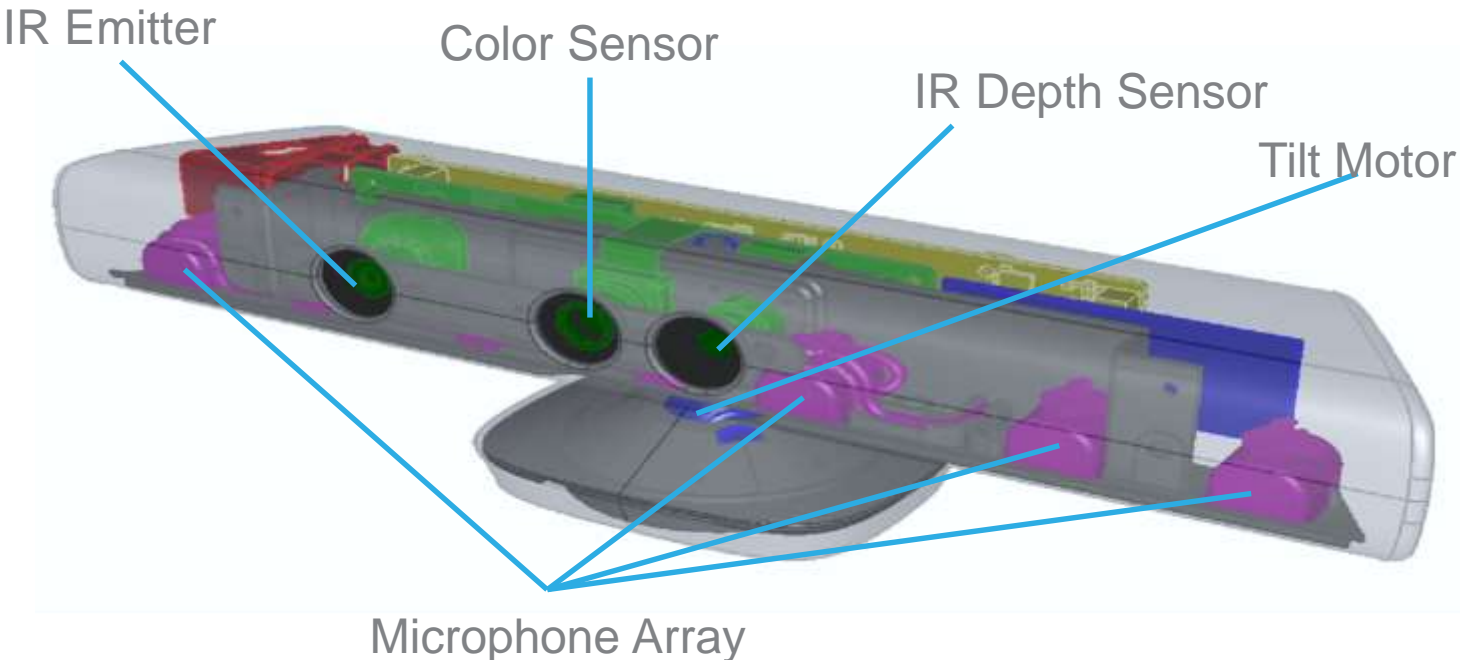
Windows

- Intel, AMD, ...
- USB 2.0+
- Multiple devices
 - 1 per USB controller
- Win32, x64
- V1: no GPU requirement
- General audience
- Unbounded scenarios...

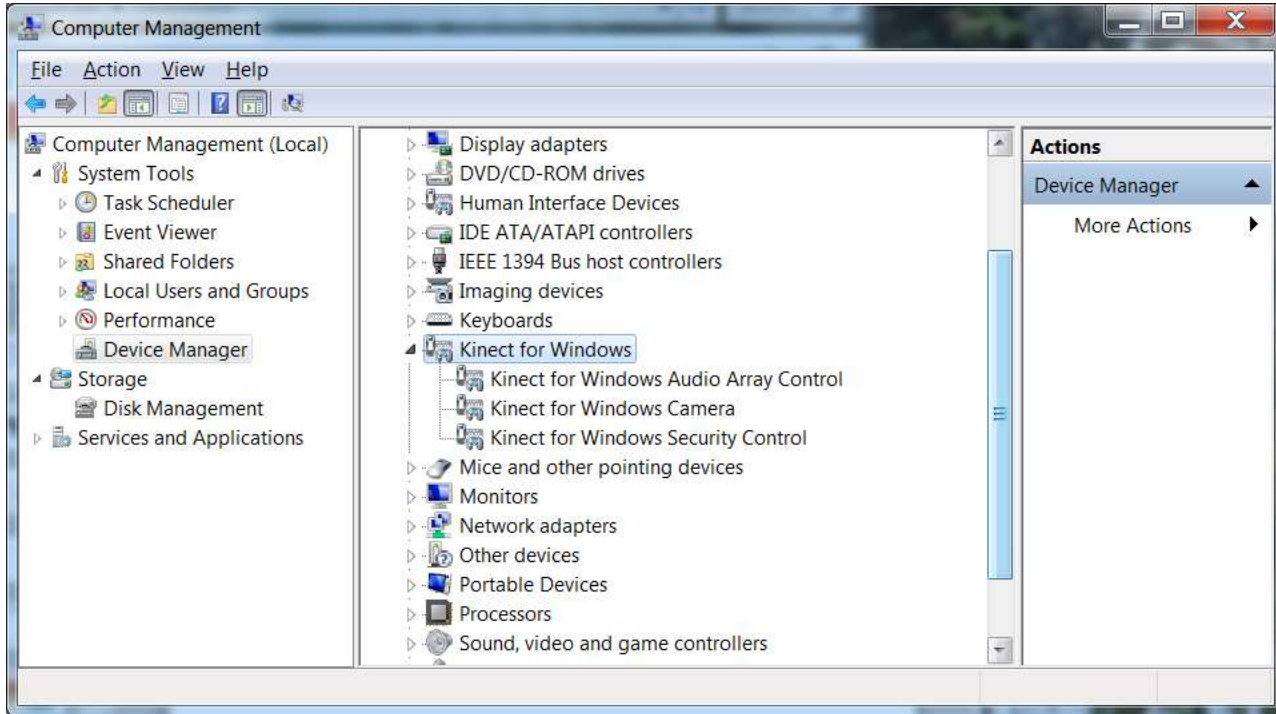
K4W SDK Block Diagram



KINECT SENSOR



Drivers



Runtime

- Sensor discovery, initialization and notification
- Frame delivery supports event-based notification and polling models
- Emphasis on low-latency, low per-frame allocations
- Supports virtual sensors, including test tools and Kinect Studio

All Components Docs Samples: C# Samples: C++ Samples: VB SDKs Tools



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Release Notes and Online Resources

Web page with known issues and links to any updated or new resources.



Documentation

Difficulty: Beginner

Language: C++, C#, VB



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SDK Documentation

The Kinect SDK API reference compiled help.



Documentation

Difficulty: Intermediate

Language: C++, C#, VB



new

CodePlex Website for Samples

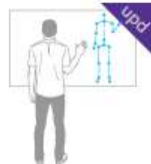
Online code repository for all Toolkit samples and more.



Go To Web Page

Difficulty: Beginner

Language: C++, C#, VB



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Human Interface Guidelines

Guidelines on how to design interactions and interfaces for Kinect for Windows applications.



Documentation

Difficulty: Intermediate

Language:

```
KinectSensor kinect = null;
```

```
void StartKinectST()
```

```
{  
    kinect = KinectSenso
```

```
    onnected);
```

```
    kinect.SkeletonStream
```

```
    skeletonData = new S
```

```
    locate ST data
```

```
    kinect.SkeletonFrame
```

```
    SkeletonFrameReady);
```

```
    kinect.Start(); // S
```

```
private void kinect_Sk
```

```
{  
    using (SkeletonFrame
```

```
    frame
```

```
    {  
        if (skeletonFrame
```

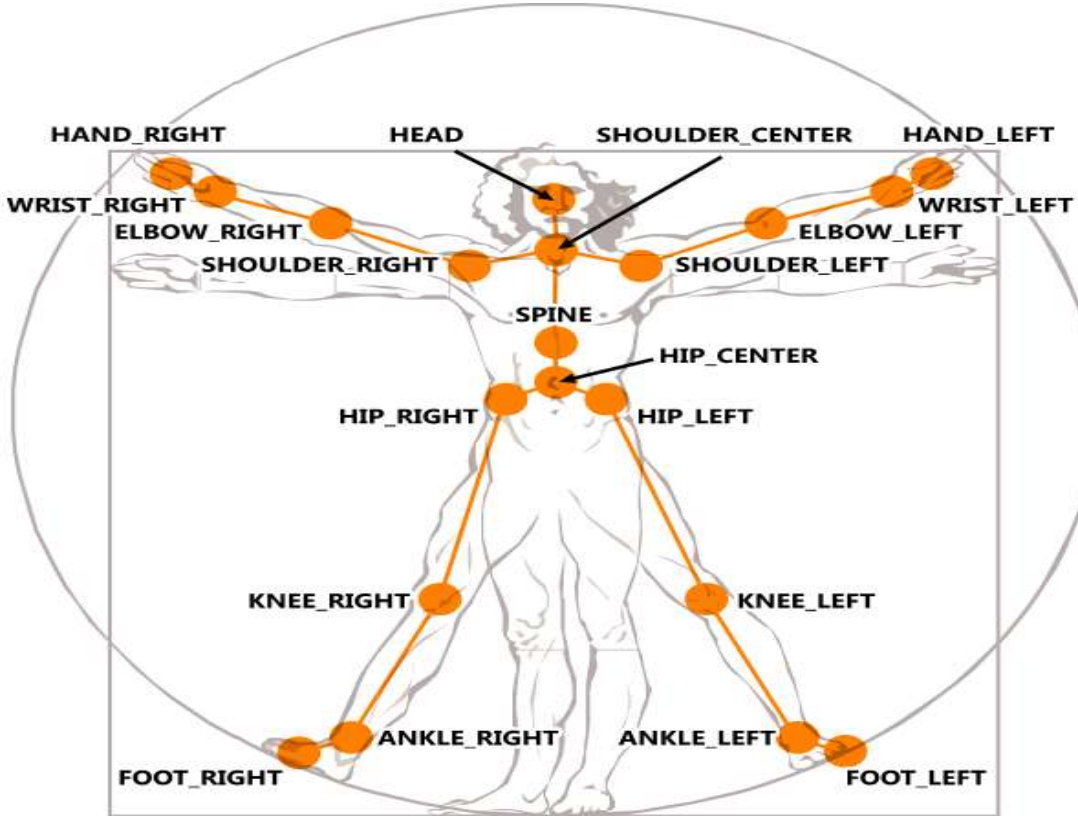
```
    is available
```

```
        {  
            skeletonFrame.C
```

```
    this frame
```

```
            ... HANDLE SKEL
```

```
        }  
    }  
}
```



Questions?

- K4W links
 - Download the SDK & Toolkit
<http://go.Microsoft.com/fwlink/?LinkId=236070>
 - Software support forums
<http://go.Microsoft.com/fwlink/?LinkId=236056>
 - Sensor support and repair
<http://go.Microsoft.com/fwlink/?LinkId=236069>
 - Samples online
<http://kinectforwindows.codeplex.com/>

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