



## EMBEDDED DEVELOPMENT COMPETITION DETAILS

### OVERVIEW

The object of this competition is to unleash students' creativity in an effort to help solve the World's toughest problems. The students will develop their own embedded device using both software development skills and hardware considerations. The Embedded Development Competition challenges students to get out there, go beyond the desktop and work to build an embedded solution using Windows Embedded CE 6.0 R2 and the provided embedded platform. We can't wait to hear about the innovative solutions you create!

Create a team of up to three (3) eligible students and a mentor (optional, but recommended) to build a working prototype of a device that will have an impact on solving some of our world's toughest problems. Compete against students from around the world while demonstrating your ability to be truly innovative. Like former winners, you could use your ideas to start your own company, or you could leverage this experience to jumpstart you into your future career.

Some countries/regions host local semi-finals events. If your team is from a country/region that is hosting a local semi-finals event, your competition dates and process may vary. We will provide more information on these semi-final events in the upcoming weeks.

**PLEASE NOTE:** If you choose to submit an entry in this Competition, then you agree that your participation is subject to the following:

- The [Imagine Cup Official Rules](#)
- The Imagine Cup Embedded Development Competition Details described below.

If there are any inconsistencies between the [Imagine Cup Official Rules](#), the Imagine Cup Terms of Use, the Imagine Cup Code of Conduct, the Imagine Cup Official Rules will govern.

### WHAT ARE THE START AND END DATES?

The competition starts at 00:01 (12:01 A.M.) Greenwich Mean Time ("GMT") on November 1, 2009, and ends at 23:59 (11:59 P.M.) GMT on May 1, 2010. (**"Entry Period"**) The Entry Period consists of the three (3) Rounds described below. You must enter by the close of Round 1 to be eligible for subsequent rounds. All required entry deliverables must be received within the designated Round in order to be eligible for judging.

<b><u>ROUND</u></b>	<b><u>START DATE</u></b> (all times 00:01 or 12:01 A.M. GMT)	<b><u>END DATE</u></b> (all times 23:59 or 11:59 P.M. GMT)
Round 1	November 1, 2009	March 1, 2010
Round 2 – Semi-finals	April 1, 2010	May 1, 2010
Round 3 – Worldwide Finals	July, 2010	July, 2010

The Competition Sign Up Period begins on November 1, 2009 at 00:01 (12:01 A.M.) GMT, and ends on March 1, 2010 at 23:59 (11:59 P.M.) GMT (Sign Up Period).

### **CAN YOU ENTER?**

You are eligible to enter this competition if you meet the Eligibility Requirements set forth in the Eligibility Criteria section of the [Imagine Cup Official Rules](#).

### **HOW DO I SIGN UP FOR A COMPETITION?**

If you wish to enter the competition, you must sign up as instructed during the Competition sign up period, and create a Team or join an existing Team. A Team may consist of up to three (3) eligible students (each a "Team"). Your Team does not need to consist of members who are legal residents of the same country/region, or students at the same academic institution, but your Team can only represent one (1) country/region.

It is recommended, but not required, that you have one (1) mentor for your Team in addition to your three (3) Team members.

For additional important details on signing up for a competition, please see the requirements set forth in the "Team and Individual Competitions" section of the [Imagine Cup Official Rules](#).

### **WHAT CONSTITUTES AN ELIGIBLE ENTRY?**

To be eligible, your entry / entry materials must meet the following content and technical requirements:

- You must build the Embedded Solution using the hardware tools and software tools described below:
  - Hardware Tools
    - Embedded platform that we provide
    - NOTE: We will provide each Team that advances to Round 2 with an eBox-3310A-MSJK embedded platform device.
  - Software Tools
    - Windows Embedded CE 6.0 R2
    - Windows Embedded CE Platform Builder
    - Windows Embedded CE IDE
- Your entry must address a social cause connected to the **2010 Theme**: "Imagine a world where technology helps solve the toughest problems".

- Any presentation, documentation, or supporting materials that are a part of your entry must be presented or submitted in the English language.

## **CE 6.0 FUNDAMENTALS**

Developed by Georgia Institute of Technology, this material provides an introduction to embedded systems development, targeting the eBox-3310A-MSJK embedded computer using the Windows Embedded CE 6.0 R2 operating system. The textbook is available in 5 languages, English, Japanese, Korean, German and Simplified Chinese. In English, you will also find a link to code samples that are referenced in the exercises in the textbook. Access to this material can be found under the Helpful Links section on this page.

### **Round 1**

During Round 1, your Team must create and submit the materials described below:

- A report (5 pages max), submitted as an electronic file in the .doc, .docx, .pdf or .txt format, which incorporates the following information:

Project Vision:

1. What problem are you trying to solve?
2. What is your proposed solution to the problem?
3. Why would the solution be best implemented as an embedded solution?
4. Proposed Project Hardware Architecture
5. Proposed Project Software Architecture and Functionalities

### **Round 2 – Semi-Finals**

Each Team that advances to Round 2 will receive an eBox-3310A-MSJK embedded platform device.

During Round 2, your Team must create and submit the materials described below.

- A Report (15 pages max), submitted as an electronic file in the in the .doc, .docx, .pdf or .txt format, that incorporates the following:
  - An Executive Summary, not to exceed 1 of the 15 pages
  - A Situational Analysis consisting of:
    - Problem Analysis
    - Project Analysis
    - User Experience
    - Market Analysis
    - Cost Analysis
  - Technical Architecture
  - Overall Embedded System Architecture
  - Hardware Components
  - Data Flow
  - Data Processing

- Testing Procedures
  - Performance Analysis
  - Project Status
- An Embedded Solution, based on the entry materials submitted in Round 1, submitted in the form of a Video Presentation (5 minutes max). The Video Presentation must be submitted as an electronic file less than 50MB in size in the mpg, .avi or .mpeg format. As part of the solution you must configure, build, debug, and deploy a Windows Embedded CE 6.0 R2 operating system image. Also, you must build an application on top of the Windows Embedded CE 6.0 R2 operating system image that you configure, build, debug and deploy. If you build an application on top of a pre-existing windows Embedded CE 6.0 R2 operating system image, you will be disqualified.

### **Round 3 - Worldwide Finals**

At the Worldwide Finals, your Team (if you are invited to advance to compete) must create and submit the materials described below:

- An Embedded Solution, based on the entry materials submitted in Round 1 and Round 2
- Present its Embedded Solution in the form of a presentation and product demonstration of up to twenty (20) minutes.

### **HOW DO I SUBMIT MY ENTRY?**

#### **Round 1:**

Navigate to the Embedded Development page and submit the required entry materials as instructed before the close of the Round 1 deadline.

#### **Round 2 – Semi-finals:**

Navigate to the Embedded Development page and submit the required entry materials as instructed before the close of the Round 2 deadline. Note: Even if your country/region is hosting a local semi-finals event, you must still upload your entry to imaginecup.com by the end of the round as defined by the local country/region rules.

#### **Round 3 – Worldwide Finals**

We will provide individual instructions by e-mail to those teams that are Finalists on how to submit their required entry materials for the Worldwide Finals in Poland.

### **ENTRY LIMIT**

We only accept one (1) entry per Team.

### **HOW WILL ENTRIES BE JUDGED?**

#### **Round 1:**

At the conclusion of the Round 1 Entry Period, all eligible entries will be reviewed by a panel (or panels) of qualified judges based on the judging criteria set forth below. Up to 150 teams will advance to Round 2. First, the top three teams from each of the countries/regions that are hosting local semi-finals will be advanced to Round 2. From the teams that remain we will advance the top scoring teams until a total of 150 teams have been advanced to Round 2. Teams must meet the minimum eligibility requirements to be advanced to Round 2; therefore it is possible for less than 150 teams to be advanced to Round 2.

**Round 1 – Judging Criteria:**

<b>Criteria</b>	<b>Points</b>
<b>Innovation: Originality and Creativity</b>	<b>0-25</b>
<b>Impact and Relevance of the Solution</b>	<b>0-25</b>
<b>Feasibility and Adherence to Theme</b>	<b>0-25</b>
<b>Quality of the Project Vision</b>	<b>0-25</b>

**Round 2 – Semi-Finals:**

If your country/region is hosting a local semi-finals event then:

- At the conclusion of the Round 2 Entry Period, all eligible entries received from each country/region that is hosting a local semi-finals event will be reviewed by a panel (or panels) of qualified judges based on the judging criteria set forth below to determine the top Team from each country/region (a “Finalist”) that will advance to compete in the Worldwide Finals.

If your country/region is not hosting a local semi-finals event then:

- At the conclusion of the Round 2 Entry Period, all eligible entries received by teams in countries that are not hosting a local semi-finals event, will be reviewed by a panel (or panels) of qualified judges based on the judging criteria set forth below to determine up to four (4) of the top Teams, one (1) per country/region, (each, a “Finalist”) that will advance to compete in the Worldwide Finals.

Overall, up to fifteen (15) Teams will be selected to advance to compete in the Worldwide Finals in Warsaw, Poland in July 2010.

**Round 2 – Judging Criteria:**

<b>Criteria</b>	<b>Points</b>
Clear Explanation of the Problem and its Solution	0-9
Understanding of the Target Market: The User’s Experience, Cost Sensitivity and Existing Alternatives	0-9
Relevance of the Problem to the 2010 Imagine Cup Theme	0-7
Clear Explanation of the Technology: Components, Purpose and	0-9

Connection/Communicate	
Is the solution a realistic, efficient and a good way to solve the problem?	0-9
Feasibility of manufacturing a commercial version based on the prototype, as depicted in the Video Demonstration submitted at time of entry.	0-7
Demonstrated familiarity with Windows Embedded CE 6.0, as measured by building an image.	0-10
Is an embedded solution appropriate for the proposed design?	0-15
Ability to exploit Windows Embedded CE 6.0 to its fullest potential to solve the stated problem.	0-10
Quality of the Report: Does it Flow? Does it Paint a Full Story? Is it Professional?	0-15

### Round 3 – Worldwide Finals:

Judging will take place in three (3) phases as follows:

#### Phase 1

Each Team will present its Embedded Solution in the form of a twenty (20) minute presentation and product demonstration to two (2) separate judging panels. Based on the Judging Criteria set forth below, the judges will assess each Team. At the end of Phase 1, we will tally the scores, and up to twelve (12) of the top Teams will advance to Phase 2.

#### Phase 2

Each of the up to twelve (12) remaining Teams will present its Embedded Solution again, in the form of a twenty (20) minute presentation and product demonstration, to another judging panel consisting of different judges. Based on the Judging Criteria set forth below, the judges will assess each Team. At the end of Phase 2, we will tally the scores, and up to six (6) of the top Teams will advance to Phase 3.

#### Phase 3

Each of the up to six (6) remaining Teams will present its Embedded Solution in the form of a presentation and product demonstration of up to twenty (20) minutes to another judging panel consisting of different judges. Based on the Judging Criteria set forth below, the judges will assess each Team. At the end of Phase 3, we will tally the scores and announce the First Place, Second Place, and Third Place Teams.

#### **Worldwide Finals – Judging Criteria:**

Criteria	Points
Ability to articulate the problem the solution is designed to address.	0-5
Ability to articulate the solution and how it addresses the stated problem.	0-5

Ability to articulate the market analysis of competitors, alternative approaches, distribution, promotion and pricing.	<b>0-5</b>
Were the technical components and their purpose clearly articulated?	<b>0-5</b>
Were the data flow and interface interactions clearly identified?	<b>0-5</b>
Was the PowerPoint deck and supporting documents well thought out and useful?	<b>0-5</b>
Does this solution clearly require an embedded-based solution?	<b>0-10</b>
Was the presentation engaging and professionally delivered?	<b>0-10</b>
Did the demo work as intended?	<b>0-15</b>
Was the project well designed and well constructed?	<b>0-5</b>
Would it be feasible to manufacture a device designed on the prototype?	<b>0-5</b>
Was the embedded system used to its fullest potential?	<b>0-5</b>
Was the Windows Embedded CE used to its fullest potential?	<b>0-5</b>
Did the demo as presented provide an engaging and compelling experience?	<b>0-15</b>

## PRIZES

### Round 1:

Each Team that advances to Round 2 will receive an eBox-3310A-MSJK embedded platform device, ARV \$450 USD.

### Round 2 – Semi-finals:

All Finalists will receive a trip to Warsaw, Poland to compete in the Worldwide Finals in July 2010. Trip includes round trip coach airfare from major airport closest to winner's home, standard hotel accommodations and select meals.

### Round 3 – Worldwide Finals:

- **First Place:** A prize package consisting of the following:
  - \$25,000 USD
  - A Microsoft IT Academy and Microsoft Learning Prize Package (ARV \$200 USD), for each member of the Team, that consists of the following:
    - Microsoft Press books
    - A Microsoft Certification Exam voucher
- **Second Place:** \$10,000 USD
- **Third Place:** \$5,000 USD

