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| Pegasus%20-%20Black%20on%20White | Department of Electrical Engineering & Computer Science, CS DivisionCollege of Engineering & Computer ScienceUniversity of Central Florida |
| *Return Form to*: Dr. Mark Heinrich, heinrich@cs.ucf.edu |
| **COP 4934: Computer Science Senior Design** |
| **Proposed Project Description Form\*** |
| (Sponsors who are willing and able are asked to provide a Team Donation of $1500 or more for supplies and the running of the CS Senior Design Program) |
| Will support: Cannot support: X |
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| Sponsoring Organization: | Carter Solutions, Inc. |
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| Mailing Address: | 3251 Progress Drive, Suite C, Orlando, FL 32826 |
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| Project Contact: | Tony Carter | Position: | President |
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| Contact Phone: | 407-308-0046 | Fax: | 407-308-0039 |
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| Contact E-mail: | tony@cartersolutions.com |
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| Project Title *(working)*: | Content Delivery Platform Using iBeacons and MongoDB |

*Please feel free to use as much space as needed for each of the sections below.*

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| **Background of Company/Organization**(Provide a brief overview of the company/organization and the specific project location here) |
| Carter Solutions, Inc. is a full service IT Solutions Company specializing in highly effective web development on the DNN Web Content Management Platform, successful Enterprise Content Management with Microsoft SharePoint, and mobile application development on the iPhone and Android platforms. |
| **Statement and Scope of the Problem(s)**(Provide the problem statement here; Please be as specific as possible to help us understand the scope of the problem, and thus the scope of the project, specifically the design content) |
| iBeacon is a new technology that permits hyper location services to know when an iBeacon aware device within inches of the beacon and using triangulation can be used to identify exact location. This is a low energy solution and is currently being used to deliver content to mobile apps designed to interact with specific beacons.Almost all companies, using this technology, have to develop and deploy their own solution from scratch. The purpose of this project is to develop a platform that customers can plug into their mobile apps and have a ready-made product to increase their time to market. |
| **Overall Project Goal(s)**(Describe the overall goals of the project in this space) |
| The goal of this project is accomplish develop a baseline platform that will allow a customer to register their beacons, wire them up for events to push content and capture analytical data from the mobile apps, as well as provide minimal reporting capabilities. |
| **Project Objectives**(Enter the project objectives that will help achieve the goals of the project; Please be as specific as possible) |
| **iBeacon Platform**1. Allows customers to register iBeacons.
2. Create rules that are applied to the each beacon that will deliver content
3. Capture data, such as distance to iBeacon at a given time period to track customer movement in a specific area
4. Create a visual report
5. Create a mobile sdk that will interact with the platform
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| **Expected Project Deliverables**(Enter the expected project deliverables including, if possible, proposed project tasks; Please be as specific as possible) |
| 1. Allows customers to register iBeacons.
	1. Create the nosql database to keep tracking information, as well as customer configuration, using
		1. MongoDB
		2. C# Driver
	2. Create a web based front end that customers will access on their desktop or mobile device, using
		1. ASP.NET MVC
		2. ASP.NET WebAPI
		3. C#
		4. jQuery
		5. CSS
2. Create mobile SDK for the Android platform
3. Create one mobile report with visual charting component.
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| **Desired Core Competencies and Experience of Team**(Please list the desired competencies/experience/knowledge needed by the project team members that you feel will facilitate successful project execution; Examples: specific programming language experience, familiarity or expertise in certain web technologies, databases, mobile SDKs, prior classes in certain subject areas, a love of computational complexity and efficient algorithms etc.) |
| Competencies that would be of most use:* Java
* JavaScript
* C#
* jQuery
* NoSQL (MongoDB)
* Algorithms
* HTML
* CSS
* ASP.NET MVC
* Internet Information Services
* Android Mobile Development
* Android SDK Development
* Object Oriented Design Principles
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| **Other Special Considerations and Project Requirements**(Please provide any special circumstances, constraints, and requirements needed by the project team members; **Examples**:* University participants must be US Citizens or Permanent Residents,
* All work is to be performed off-campus at a specific site,
* *Interdisciplinary project*: You would like to see CS students teamed with engineering students from one or more of: Computer Engineering, Electrical Engineering, Mechanical Engineering, Industrial Engineering, Civil and Environmental Engineering (please specify)
* All team members and the professor must submit to background checks,
* All team members and the professor must sign non-disclosure agreements
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| **Project Mentor(s), if different than who is listed above**(Please provide the contact information and title/position for the project mentor(s), who will advise the student team) |
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*\*IMPORTANT NOTE: Proposed projects may not be chosen by student groups. In any one semester the number of potential industry-sponsored, faculty-proposed, or student-funded projects may exceed the number of student teams. If this project proposal is approved by Dr. Heinrich as a potential CS Senior Design project, you or an appropriate representative will be asked to come to class and give a 15-minute project pitch to the students. Keep in mind this is your chance to convince the students why they should pick your proposed project. Think about what is in it for them, what technologies they will get exposed to, what are the broader, enduring, and social impacts of the work, etc. If your project is chosen, you will be notified typically by the 4th week of the semester. If your project is not chosen, you will be notified in the same timeframe and if it makes sense for your timeline, we would love to offer the same project in the next semester.*