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Debi Kim
Philips Healthcare

◊ Philips Healthcare PercuNav Virtual Medical Simulation ◊

PROJECT SCOPE

DDA VMS will build an original Virtual Medical Simulation to highlight the various configurations of the PercuNav ultrasound system with Fusion navigation. This includes the Field Generator, the Tool Connection Unit, the articulated mobile beam which holds the Field Generator in place, and the Fusion navigation system with laptop and large screen on adjustable arms. Also included will be a physician's table, a general anesthesia cart, and the patient on bed. The equipment will be portrayed on a white, abstract, or photographic backdrop as standard. Optionally, users would have the ability to select one of three 3D-rendered clinical environments in which they would like to see the PercuNav system: an ultrasound procedure room, a CT suite, or an IR suite.

Clicking any of the components of the PercuNav system will highlight that component and bring up image and PDF references relevant to that specific component; DDA will grant Philips access so that they can update these image and PDF files as needed. PDF references may include specification sheets, studies, sale sheets, etc. Image references can portray photographs of the components at different angles or with different options. The user will also have the ability to choose a close-up view of the patient by clicking the image of the patient. In addition to these interactive features, there will be one 2D animation approximately 15 seconds in length demonstrating specific functionality of the PercuNav ultrasound system. This will demonstrate how the various components of the equipment work together through GPS signals as well as how the image presented on screen is matched to the appropriate patient space through the use of landmarks.

DDA will offer a variety of optional developments to enhance the essential Virtual Medical Simulation platform. Philips can choose to add on a Clinical Environment Simulator to portray the equipment in its three most common settings. In this case, DDA would source 3D models to represent the three clinical environments in which the equipment is used: the ultrasound procedure room, the CT suite, and the IR suite. These models would then be customized to create these 3 different 3D-rendered clinical environments, and the user would have the ability to switch not only the various configurations of the equipment, but also the environment in which is portrayed.

DDA can also program interactive features to portray movement and articulation of some of the components of the PercuNav ultrasound system. Up to two client-provided Case Study videos can be incorporated into a video player for further reference by the user, including a demo of the display of the live navigation of the instrument and an example of how a procedure might look in real time. Alternatively, DDA can integrate additional clinical images and a

written PDF to illustrate these items. DDA can also include a share-via-email function to allow users to email themselves any PDFs or images found on the PercuNav Virtual Medical Simulation platform.

The tool will be formatted for viewing on PC or Mac desktops as well as Android and iPad tablets via the web; DDA will offer hosting of the PercuNav Virtual Medical Simulation on an online location as an option. The Philips Healthcare PercuNav Virtual Medical Simulation will be the go-to tool that the company's salespeople can use on their laptops to visually demonstrate the components of the PercuNav system in its various configurations and (optionally) clinical environments while being able to support the sales process with additional information as necessary.

DELIVERABLES

In the development of this Clinical Environment Simulation tool, DDA VMS will:

- Assign one of our professional writers to act as the project coordinator. While you can contact anyone of our management, technical, or creative people who are assigned to your project, the project coordinator will be the main point of contact and will relay any revisions you specify to the correct technical or creative department.
- Hold planning and conceptual discussions with the client to determine the best direction moving forward.
- Gather all 3D models, images, PDFs (literature), and screen captures (if required) for build-out of the contents of each clinical environment within the tool.
- Create mockups of the various configurations of equipment for client review.
- Create wireframe user navigation prototype including all combinations of equipment that can be portrayed in the clinical environment simulation.
- Receive all images and PDFs of supporting materials that will be accessible via menu selections in the clinical environment simulation.
- Create access to allow client to update supporting image and PDF files as needed.
- Design graphical user interface (GUI) based on approved wireframes.
- Incorporate 1 approximately 15-second 2D animation to portray how the various components of the equipment work together through GPS signals as well as how the image presented on screen is matched to the appropriate patient space through the use of landmarks.
- Integrate the platform files for final distribution to Philips employees. Optionally, DDA can provide dedicated hosting for the platform on its ultra-secure web servers.

Optionally, DDA VMS can:

- Build out a video player that will allow users to loop 1 or 2 Case Study videos provided by the client demonstrating the display during live navigation of the instrument and/or how a procedure would look in real time.
- Integrate additional clinical images and a written PDF to illustrate the above.
- Add share-via-email functionality to allow users to email themselves any PDFs or images found on the Clinical Environment Simulation platform.
- Source 3D models to represent the three environments to be used: the ultrasound procedure room, the CT suite, and the IR suite.
- Use 3D models and customize to create 3 backdrops of the 3 different 3D-rendered clinical environments in which the ultrasound equipment will be portrayed.
- Program environment backdrop and equipment configuration interactivity features.
- Create interactive 3D-rendered animations showing various ways the PercuNav system can be moved and articulated.

BUDGET STATEMENT

Project Base	
Planning:	10 – 15 hours
Project Coordination:	10 – 17 hours
Wireframe Prototype:	5 – 8 hours
Design Concepts:	8 – 12 hours
3D Model Import:	12 – 22 hours
3D Equipment Setup:	8 – 12 hours
Interface Graphics and Layout:	10 – 15 hours
Room Layout Interactivity Programming:	20 – 35 hours
Product/Patient Details and Gallery Programming:	20 – 28 hours
Access to Change Supporting Image and PDF Files:	5 – 8 hours
Technology 2D Animation (≈15"):	3 – 5 hours
Quality Assurance/Testing:	8 – 14 hours
Total:	119 – 191 hours

Estimated Costs for Design and Development of Philips Healthcare PercuNav Virtual Medical Simulation:

119 – 191 hours @ $110 per hour = $13,090 – $21,010.*

Base Project Management Fee: $300

*Additional costs may apply; please see Notes for more details.

– Options –

Clinical Environment Simulator: Changeable 3D Clinical Environments (3 Environments)	
3D Backdrop Setup:	10 – 15 hours
Environment Backdrop Interactivity Programming:	10 – 15 hours
Total:	20 – 30 hours
Interactive Product Movement/Articulation	
3D Animation:	15 – 20 hours
Product Movement Interactivity Programming:	20 – 35 hours
Total:	35 – 55 hours
Approach and Real-Time Procedure Videos (2 Videos):	3 – 5 hours
Approach and Real-Time Procedure Images/PDF:	3 – 5 hours
Share via Email Functionality:	5 – 8 hours

Please Select Requested Options from Below

☑ **Clinical Environment Simulator with Custom 3D Environments (3 Environments):**
20 – 30 hours @ $110 per hour = $2,200 – $3,300

☐ **Interactive Product Movement/Articulation:** 35 – 55 hours @ $110 per hour = $3,850 – $6,050

☑ **Approach and Real-Time Procedure Videos (2 Videos):** 3 – 5 hours @ $110 per hour = $330 – $550

☑ **Approach and Real-time Procedure Images/PDF:** 3 – 5 hours @ $110 per hour = $330 – $550

☐ **Share via Email Functionality:** 5 – 8 hours @ $110 per hour = $550 – $880

☐ **DDA Ultra-Secure Web Server Hosting:** $75 per month, billed annually.

**Notes*

- Any stock media such as images and 3D models that may be used will be additional and will be passed along to the client at actual cost without markup by DDA.
- Philips is to provide 3D models of equipment portrayed in the Clinical Environment Simulation in suitable formats for use by DDA in the creation of the tool: OBJ, FBX, or LWO.
- Up to 5 documents and 5 images per piece of equipment may be added as supporting materials; additional supporting materials may increase development times slightly.
- Development times for the Virtual Medical Simulation and the optional Clinical Environment Simulator for changeable clinical environments are based upon 3 custom 3D-rendered clinical environments and up to 15 room and equipment configurations; additional environments and/or room and equipment configurations may increase development times needed.

Time expended will be logged into the DDA TRAC™ (Time Resource and Accounting) Program. Detailed time logs will be included with invoice at billing. All times are estimated.

TERMS

Base Deposit: $8,700

Deposit for Clinical Environment Simulator with Custom 3D Environments: $1,400

Deposit for Interactive Product Movement/Articulations: $2,500

Net balance is due 15 days from final delivery.

Signature for Client Acceptance

Oct 2 2014
Date

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