



“I’m sorry to have to tell you this but further testing confirms you have cancer.” A flood of shock, disbelief, fear and entire spectrum of emotions confronts the patient. There’s nothing to soften the blow of hearing the test results. How could there be with something like cancer? The patient folds back into the chair as the doctor continues in a frank and open manner. “There is no need to speculate about putting a time stamp on your life. The malignant cells can be treated with radiation therapy”.

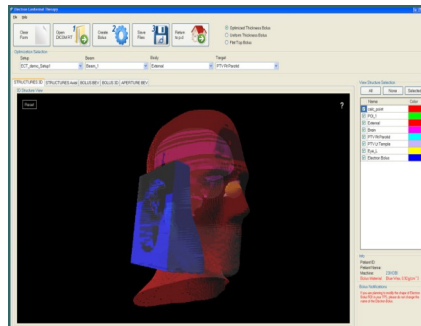
### ***The Dosimetrist***

A few agonizing weeks pass. The patient still struggles with the terms of the disease but has completed all the diagnostic studies that help produce a treatment schedule to begin receiving radiation therapy. The physician had determined the appropriate plan for treatment, and now the responsibility fell upon the Dosimetrist to provide the physician with a simulated radiation dose distribution for the patient’s specific needs. Through the use of treatment planning software, the Dosimetrist builds a 3D patient based on all the CT/MRI scans for that particular patient according to their specific anatomy. The software then provides the physician with the precise radiation dose distributions and dose calculations that will be administered for the patient’s treatment. Treatment designed to halt and purge the deadly cells to help save the patient’s life without harming or destroying healthy tissue

and organs near the cancerous growth.

### ***A Collection of Tools***

Confident in his calculations he performs a few more keystrokes that sends the set of treatment plans to a centralized database within the cancer center. The entire medical team can now access the treatment plans. The Dosimetrist sits back in his chair thinking of the advanced technology available to him and how quickly he mastered the new clinical software treatment planning tools. In fact, the entire medical team had. The ad-



**3D Human Anatomy and Compensator**

vanced technology included software that could automate setup of the treatment machines through the computer network data transfer system inside the center. It removed redundant human input, the opportunity for error and reduced the time the patient spent in actual treatment. The vastly improved 3D rendering visualization techniques had broadened the advantages and outcomes of radiation therapy.

### ***Raising the Standards***

Everyone acknowledged the bar had been raised on network interoperabil-

ity and treatment benefits. There was also an artificial intelligence component in the software which could conduct experimental and iterative treatment planning solutions based on inversely planned optimization algorithms that increased the speed and accuracy of treatment planning. Most importantly, the bar had been raised in clinical methods for saving lives and for research and development in advancing effective cancer treatment.

In the background of all this technical wizardry, the staff are always mindful of the people that they don’t see daily. Folks who include, the husbands, wives, grandparents, sons, and daughters, family and friends. The Dosimetrist would continue to raise the bar in radiation oncology only he hadn’t realized it just then or that he would go on to form his own company

### ***Entrepreneur with Innovative Spirit***

Some twenty-five years ago, Richard Sweat transcended his professional work as the Junior Dosimetrist at Boca Raton Community Hospital to become the CEO and President of **.decimal®**. The Sanford, Florida company’s name is pronounced dot decimal. The name is an acronym for Digitally Enhanced Compensation/Intensity Modulation with Alloys. The dot in the name means it is an e-business in which all orders are received over the Internet. The entrepreneur and innovative spirit of Richard Sweat has brought advanced medical aides and services to radia-

tion oncology. **.decimal®** is a small business with enterprise caliber leadership and some people see this company emerging into an enterprise space

### ***Manufactured in the United States***

The manufactured medical aides are known as compensators and apertures. They are used as a core influencer for the delivery of a radiation beam and are precisely manufactured to the patient's needs. This means the patient receives radiation with highly con-



**Highly Conformed Distribution**

formed distribution of the treatment site such as the head, neck, breast, prostate and a few other areas of human anatomy that are more complex like the lungs. All of the company's orders are done electronically through a patented Internet-based system developed by the **.decimal®**. Product Development department in collaboration with its on-staff physicists and other core developers. **.decimal®**'s patient-specific devices are made from brass, aluminum, acrylic, and wax and are CNC machined in one of their multi-axis machining centers. The cost can range from \$195 to \$1500; typically \$325 with a 72-hour shipment guarantee.

Over 180,000 of these medical aides have been manufactured in Sanford, Florida in the company's 50,000 square foot facility. It currently houses and operates an impressive collection of manufacturing and test equipment that include;

- Mazak Nexus 3 Axis CNC Mills
- Mazak Nexus 5 Axis CNC Mills
- Mazak Integres 7 Axis CNC Mills
- Mazak Variaxis 5 Axis Mills
- Mazak VTC 3 Axis Mills
- Mazak Nexux 2 Axis lathes
- Zeiss Coordinate Measuring Machine

Over 200 hospitals and cancer centers have made **.decimal®** an essential part of their sophisticated medical solution for cancer treatment in the United States and Japan.

These U.S. manufactured compensators and apertures are used in Intensity Modulated Radiation Therapy (IMRT), Bolus Electron Conformal, Proton, and Missing Tissue Compensation therapies for treating cancer patients. The precise manufacturing design specifications and requirements of a compensator or aperture are communicated directly to the **.decimal®** patented Internet-based system directly from the individual cancer centers.

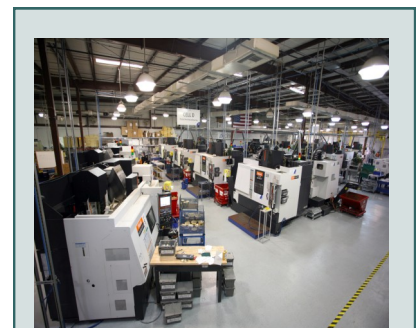
### ***Some of the Value***

Medical professionals have access to the **.decimal®** patented Internet based manufacturing system without an ongoing licensing fee. Costs are incurred only when the medical device is required for treatment with rapid turnaround times even though they are a complex, precision-machined device.

This digital media styled business model allows the cancer center to save money on expensive, multi-million dollar hardware, which require ongoing maintenance and service contracts. With **.decimal®**, the customer only needs to purchase the product(s) when the product is necessary for that particular patient's requirements

### ***The Back Lighting***

Richard Sweat's critical cognitive ability to analyze complex data carries over from his days as a Dosimetrist as well as his passion to continue research and development for improving cancer treatment. The many achievement awards that back light the company's track record come in part by high standards that include U.S. Food and Drug Administration (FDA) compliance, a range of International Standards of Operation such as (ISO) 9001, 14001, 13485, International Traffic in Arms Regulations (ITAR) and European Conformity (CE Mark). **.decimal®** is a prime component supplier of goods-medical devices that require U.S. State Department certification for exporting which



**50,000 Square Foot Facility**

explains the need for ITAR registration. The company also has certification as a Japanese foreign medical manufacturer.

Richard Sweat says repeatedly that each .decimal® manufactured medical device represents a person with family and friends. It's not just a manufactured part. This thinking and compassion is fundamental to the company's culture. Training and education of employees in the processes and operations is performed on a regular basis that includes providing high quality customer care and support.



Internet Based Business Model

He'll also explain there are no obstacles in his life's work, only opportunities. This could not be more evident when you discover he tackled big business lobbyists, who for a time, influenced the placement of regulation on CPT-codes that denied .decimal® the same reimbursement insurance coverage compensation as big business under medical plans for cancer treatment. The Billing of CPT Code 0073T and 77418 now reimbursed at the same levels for Intensity Modulated Radiation Therapy (IMRT) in both hospitals and free-standing clinics. He worked

through his elected congressional and senate representatives along with half a million dollars to successfully remove the unfair reimbursement restriction. Then he worked to lift the exclusion of U.S. Veterans in the TRICARE system that were disallowed coverage for compensator-based cancer treatment.

When the question of value is asked, Richard Sweat talks about the design and operation of the .decimal® patented Internet-based manufacturing system. It saves hospitals, cancer or research centers money by not having to invest in or maintain large hardware and software configurations or ongoing user licensing fees.

As an Internet-based system, redundancy is built in to keep availability going 24/7 even when there are serious disruptions like the March 2011 earthquake and tsunami that struck Japan.

### *Mission Critical*

Millions of dollars are required to build and configure manufacturing milling and test equipment used in the company's operations and so does the development of thousands of lines of software coding. The precision medical devices are made affordable through extensive integration of manufacturing and testing processes. .decimal® has transcended its successful medical Internet-based business model into contract manufacturing for other needs. The company delivers mission-critical parts in quick turn-around that includes proto-typing

and production. It is continuing to evaluate other contract manufacturing opportunities such as production of synthetic tissue for human anatomy construction. The use of imitation human tissue such as a thigh or head offers great advantage in teaching medical care and treatment. The company is also exploring possibilities for developing 3D software in simulation and training.

### *The Relationships*

It is no surprise that Richard Sweat spends his time with smart people. The company holds an annual IMRT symposium and fosters university relationships that include the University of Central Florida's (UCF) School of Engineering, Louisiana State University (LSU) Cancer Center and the University of South Florida (USF) Moffitt Cancer Center. These relationships have focused on working with the Moffitt Cancer Center for three years on the use of compensators for tumors located in the lung or abdomen that experience motion and Electron Conformal Therapy for breast cancer.



Annual IMRT Symposium





**Central Florida Chapter of  
Test and Evaluation  
Association**

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The last two years included work on Electron Conformal Therapy with LSU and four years with (UCF) on internal automation and quality systems.

The company's further achievements were acknowledged when it was awarded a grant through a Therapeutic Discovery Program. It was based on their submittal to develop and commercialize Electron Conformal Therapy Bolus.

The pace for research, development and working with innovative societies is on track for **.decimal®**; although working at the cutting edge of technology always tests the limits of regulatory systems and processes. Sometimes this means that **.decimal®** technologies must wait for policies and regulations to catch up.

***Multi Media***

The company has its own video and audio recording studio at its 50,000 square foot facility and produces all its own audio and video marketing and educational material. The company commitment to education is substantial, as is the time engaged in sharing the **.decimal®** experience and capabilities with kids in middle school, high school, and college to help encourage future entrepreneurs in Central Florida.

Tours of **.decimal®** are held on a regular basis. Most recently with the Seminole County Lyman High School Entrepreneurship Program and a group of Seminole County teachers associated with The Science, Technology, Engineering and Mathematics (STEM) Education Coalition. There are also plans to expand Internship opportunities at the company.

Company growth and development continually incorporates daily use of connectivity, mobility, interactivity, convertibility, ubiquity and globalization. These are all important filaments in a complex business environment for providing value, best practices and leadership that are helping grow the U.S. economy and keep manufacturing in the U.S.

***An Invitation***

**.decimal®** is inviting the Central Florida Chapter ITEA membership and guests to attend a tour of their facility on Wednesday July 13, 2011 beginning at 2:30pm. Refreshments and hors d'ouvres will be served and time to socialize and network through 5:00pm.

An RSVP is required to attend the July 13th facility tour and social.

Please send an email to Karen Sweat at [ksweat@dotdecimal.com](mailto:ksweat@dotdecimal.com) or call 407-330-3300 or 800-255-1613 by July 6th to confirm attendance.

**.decimal®**

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Sanford, Florida 32771

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[www.dotdecimal.com](http://www.dotdecimal.com)

***“My time spent on the Board at the Manufacturers Association of Central Florida (MACF), Orlando, Inc., and (STEM) Council are all related to getting the word out about the need for skilled workers and how manufacturing today has a great future-for those that are strong and committed to operational excellence”.***

***Richard Sweat,  
CEO and President of .decimal®.***

**.decimal®**  
The benchmark for custom radiation therapy

*Elizabeth Hood is the business owner of [Facet Project Management](#) and Corporate Liaison for the Central Florida Chapter of International Test and Evaluation Association (ITEA). She is also a contributing writer for ITEA-CF Areas of Distinction.*