CEO CFO

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VUEMED

Cloud-based UHF RFID, Barcode Scanning and Mobile Solutions for Hospitals and Medical Device Manufacturers that Provide Real-Time Visibility, Tracking and Inventory Management from Product Tagging to the Point of Care

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> "Our RAIN RFID technology provides real-time visibility and traceability of medical products and supplies throughout the supply chain, from the moment the product is labeled with a passive UHF RFID tag at the manufacturer site, all the way through the supply chain to the hospital and to the patient. The advantage for the manufacturer is to be able to have visibility of their products all the way inside the hospital. For a hospital, it bridges the gap between materials management and clinical areas in order to get the most accurate and timely communication of data on a product's availability, location and pedigree information (lot or serial number and expiration date). Our technology provides the hospital with a very powerful tool to have this critical data at their fingertips in a way that is meaningful and actionable so that they can optimize their inventories as well as ensure proper risk management in controlling expirations, recalls, and accuracy of patient records."
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> **- Arnold Chazal, CEO, VUEMED**

CEOCFO: *Mr. Chazal, how did the idea for VUEMED originate?*
Mr. Chazal: In 2005 I was working as a management consultant on various projects for medical device manufacturers and so I was dealing with customers and hospitals on a regular basis. I realized that there were a lot of opportunities for improving the supply chain and inventory management. I was observing waste everywhere and there was no reliable data available in real time to know what was taken off the shelf, what was expiring, or what needed to be ordered or replaced. That was what inspired my thinking about creating a system to improve clinical inventory management. This was the beginning of the concept behind VUEMED.

CEOCFO: *How does VUEMED work today?*
Mr. Chazal: VUEMED is a health care technology company and sells its solutions as a Software as a Service. We have developed one main platform called VueTrack™, which is cloud-based, with a light software application deployed at the client site for data capture. We have developed different versions of VueTrack – one which is a barcode scanning application and another newer version that we have launched in the last few years which is an Ultra High Frequency, or UHF, Gen2 passive (RAIN) RFID data capture solution called VueTrack-RF™. Just last month we also launched a mobile version called VueTrack-Mobile™ which provides UHF RFID technology on the go.

CEOCFO: *Would you walk us through a concrete example of how a hospital might make use of VueTrack and the various services, so we get a feel for how it actually works day to day?*
Mr. Chazal: Today most hospitals are still set up in silos. There is the materials management side and there is the clinical side. Unfortunately, these two sides usually don't work well together, and the supply chain - which spans these two silos – is often poorly run due to the lack of visibility and traceability of supplies from one end to the other. Fortunately, our VueTrack system, using the scanning or UHF RFID technology, allows for data capture of the products as they are entering the hospital, wherever the point of entry is, and follows them through the supply chain all the way to each particular department, inside their supply rooms and into the procedure rooms where it records product usage for patient care as associated with each patient case.

CEOCFO: *Who is using your services today? Who is the typical customer? Where are they located?*
Mr. Chazal: VUEMED serves hospitals and medical device manufacturers – mainly in the U.S. but also in the U.K. and Australia. Our RAIN RFID technology provides real-time visibility and traceability of medical products and supplies

throughout the supply chain, from the moment the product is labeled with a passive UHF RFID tag at the manufacturer site, all the way through the supply chain to the hospital and to the patient. The advantage for the manufacturer is to be able to have visibility of their products all the way inside the hospital. For a hospital, it bridges the gap between materials management and clinical areas in order to get the most accurate and timely communication of data on a product's availability, location and pedigree information (lot or serial number and expiration date). Our technology provides the hospital with a very powerful tool to have this critical data at their fingertips in a way that is meaningful and actionable so that they can optimize their inventories as well as ensure proper risk management in controlling expirations, recalls, and accuracy of patient records. Our solutions are also all GS1 Gen2 EPC standards-based and compliant with the FDA's Unique Device Identifier (UDI) regulation.

CEOCFO: *How does VUEMED compare with other systems that may be available for tracking?*
Mr. Chazal: We have two lines of products, as I mentioned earlier. We have a barcode scanning application which we launched in 2008. Most recently, in 2013, we started to develop and then subsequently launched VueTrack-RF, which is the UHF RFID version of our application. As a result, we have two different types of competitors. One type is still mostly doing barcode scanning for supply tracking. And on the RFID side, there are a couple of cabinet-based solutions that use a near range High Frequency (HF) RFID technology. To read the tagged items, HF RFID technology requires close proximity reads and thus necessitates proprietary cabinets, making this type of solution unfeasible for most hospitals because it is so expensive and isn't scalable. By contrast, UHF RFID technology, which VueTrack-RF uses, provides read ranges of up to 100 feet and enables the tracking of products continuously between and throughout multiple locations in a facility at a fraction of the cost. Any space, and any current storage solution, can become an RFID-enabled area, able to track anything with a UHF RFID tag, such as a device, an asset, or a person.

CEOCFO: *VueTrack-Mobile is pretty new. Do potential customers understand and appreciate the fact that you have such a range?*
Mr. Chazal: I believe that they do because if you are looking at a solution that is RFID-based and you have to buy a lot of cabinets to put all of the RFID-tagged products in them in order to be able to control your inventory, it is a very expensive proposition. It may mean that you have to remodel your department or pull out your existing cabinets to make room for these special proprietary RFID cabinets. It may mean that you have to make a choice between the products that you are going to track and those you won't, because in terms of space you may not be able to accommodate enough cabinets in your space to keep all of your supplies in them. Therefore, a cabinet-free system like ours offers an attractive alternative and is appreciated by people just in terms of the cost and the fact that they do not have to remodel or change their workflow. Also, our VueTrack-RF and VueTrack-Mobile applications can scale very easily to track assets and people. That means patients, reps and staff, without any additional infrastructure. Same for asset tracking, whether it is a wheelchair, a bed, or an infusion pump.

CEOCFO: *There is so much on the minds of health care providers and hospitals. How do you gain attention? Is this an area that hospitals see as a good place to save money or is it something they do not think about enough? What do you find in general?*
Mr. Chazal: That's a very good question. In this post-recession era, many of the senior executive teams at hospitals realize that the low hanging fruit in their search for quick wins and long-term improvements is indeed in the supply chain – especially the inventory management piece. It represents a very large item in their budget and is something that can be controlled much better. That also means better delivery of care for patients when you know that you have the right products available. Your clinicians are not running around trying to find a key product or supply while the patient is waiting – you know where it is and you know that it is not expired or recalled. All of that is also important for maximizing your budget, having more accurate billing, and optimizing reimbursement. As a result, looking at inventory management as a way to improve revenue and the balance sheet is something that is being considered very carefully at this time. It's starting to really gain the attention of the C-Suite, especially with the introduction of newer technologies like UHF RFID because it is hands-free, compliant with the new data standards, and incredibly effective and efficient.

CEOCFO: *Is it pretty universal worldwide? Do hospitals and manufacturers approach things the same way or do you find there are differences that you need to account for when working in different parts of the world?*
Mr. Chazal: Different countries in which we do or intend to do business have different health care systems. Some of them are mostly private. Others are exclusively public and sponsored by their government, like Canada. Looking throughout Europe and Australia, there is a mix of private and public health care systems, with the public service paying for private care at times. The struggle with managing supplies, controlling inventory, having the right products available, being able to bill correctly for each product, avoiding over-billing and under-billing, accounting for every item used for patient care, and controlling the cost of delivering quality care for each type of procedure – these issues are on every hospital's mind

around the globe, at least in developed countries. Also, most manufacturers make their products in different parts of the world and sell internationally, and thus face the same challenges of expiration control, recall management and consignment tracking.

CEOCFO: *How do you reach out to prospective customers?*
Mr. Chazal: Many of them find *us*. They are looking for a solution and they've seen us speak or exhibit at a conference, or they've seen an article that we've published, or they're finding us on the web. We also have our sales force and partners reaching out to hospitals. Our approach is to demonstrate our technology in a health care environment. When a technology like UHF RFID – which has been around in retail for a long time – is applied to health care, you need to be able to demonstrate what that is, and there is that 'wow' factor when people realize that RFID can track multiple products from one location to the next. It can report on all inventory transactions and status in real time with up to 99.5% percent accuracy or close to that. The ability to know the exact location of a unique product, the quantity of products available and all of the pedigree information for each individual item (meaning lot number, serial number and expiration date) is very powerful. So seeing it in action is believing in the power of this incredible technology. Therefore, we do a lot of demonstrations to hospital systems. We also work with manufacturers where we provide turnkey solutions for them to be able to tag their products while becoming FDA UDI compliant, which is very important because of the mandate from the FDA for the manufacturers of medical devices to be UDI-compliant by the end of 2018. This is really playing a significant role in pushing them to adopt a technology that ensures that all product information encoded in the RFID tag follows the UDI requirements and provides the visibility that they currently do not have of their inventory in the field (hospitals, sales reps' trunks, etc.), especially when inventory is on consignment.

CEOCFO: *How do you ease implementation?*
Mr. Chazal: We start with an assessment to architect the whole solution. In that process we select the appropriate type of RFID antennas and readers and decide where this light hardware is going to be placed in order to provide the best RFID coverage. The second element is really the actual implementation, which is comprised of the hardware and its installation. We do not manufacture any of the hardware, but source it from the very best manufacturers such as Impinj and Zebra. The physical installation of the hardware includes the tuning and calibration of the different elements of our solution to optimize the reads of RFID tags. Then everything is reported, analyzed, and monitored in the cloud. We work with the customer to set up a full inventory management program, and then support them by providing assistance on the optimal reports and analytics to help them reach their objectives. We work with customers to maximize the information generated by our system so that they can go after all of the savings opportunities or additional billing opportunities that our system is finding for them.

CEOCFO: *Why choose the VUEMED solution?*
Mr. Chazal: Our customers choose VUEMED because our technology is so innovative and also because it is based on one platform that accommodates different types of solutions: whether you want to go with barcode scanning or a fixed RFID infrastructure or a mobile RFID technology. All of our applications work off the same technology and cloud platform and can be mixed to provide a very customized solution and the best results. Also, we have had experience with cloud-based technology since very early on, even before 2008. Additionally, we have a massive database of products in our cloud with standard clinically-relevant descriptions and accurate UDI-compliant information. That's very important, as it allows us to always offer the source of truth for any supply-related transaction, regardless of which materials or clinical system is in place or if a hospital is switching from one system to another in any clinical or supply chain area.

I really think that what's attractive to potential customers is the flexibility of our solutions platform, its low cost compared to the competition, and the scalability where you can go from tracking supplies to tracking assets or people with one simple installation – these are our key differentiators from the competition. We are putting our focus on developing additional tools based on that platform to create an ecosystem of UHF RFID-based technologies that work in harmony and are taking care of the many different types of challenges that hospitals are dealing with on a daily basis.

Finally, and very importantly, the ROI that our solutions provide to customers has been proven to exceed on an annual basis at least three times their annual cost, and that has become a key decision-making consideration for hospitals as the industry is actively seeking solutions that provide benefits that clearly exceed their cost.