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Developing a Revolutionary Antenna System in Ka-band Frequency capable of Tracking 2 Satellites Simultaneously, C-COM Satellite Systems is making it possible to Track the New Constellations of LEO and MEO Satellites now being deployed Worldwide

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"We believe that many new vertical markets will be created that do not exists today using this new satellite antenna technology that will make it possible to deliver high speed Internet over satellite using the latest generation high throughput LEO/MEO and GEO constellations."- Dr. Leslie Klein

CEOCFO: ***Dr. Klein, we have spoken many times over the years; would you tell our readers the focus of C-COM Satellite Systems today?***
Dr. Klein: We continue developing new products and new technologies for the Satellite market. We are also increasing our market share by signing up new integrators and resellers all over the world. The company today manufactures over 30 different antenna models, which are sold in more than 100 countries around the world. We have over 8,000 mobile antenna systems installed worldwide. C-COM is also developing a new antenna system in Ka-band frequency. This electronically steerable phased array antenna should revolutionize the satellite industry and make it possible to track these new constellations of LEO and MEO (low orbit and medium orbit) satellites which are being deployed worldwide by several satellite operators. One of the big challenges to the success of these constellations is the need of antenna systems which can track multiple satellites simultaneously as they orbit around the globe. The C-COM phased array antennas are being designed to be able to do just that and make it possible to deliver high bandwidth from these satellites into moving vehicles, aircraft, boats, trains etc. and ultimately to consumers as well.

CEOCFO: ***What have you figured out that enables you to do what is nearly impossible?***
Dr. Klein: We have figured out how to build a new antenna system not using parabolic dishes that have been a standard for fifty-some years. We are using printed circuit board technology coupled with integrated circuits that function as transmit and receive devices. With this technology we can construct a basic building block of an antenna system which can be combined to form any size of an antenna capable of

tracking 2 satellites simultaneously. The beam formed by this antenna is steerable 360 degrees, so the tracking is accomplished electronically while the antenna can remains static or is in motion and is able to track LEO/GEO or MEO satellite constellations.

CEOCFO: ***Even with perfecting the technology, can something happen in the atmosphere to the satellites that would affect the working from the top down?***
Dr. Klein: One company is looking to put up over a thousand satellites. A Canadian company called Telesat is putting up 120. One satellite that becomes defective for example or does not work properly would not affect the performance of the rest of the satellites in the constellation. There are also back up or spare satellites that can be positioned to replace a defective satellite in the constellation.

CEOCFO: ***Why are satellites being deployed if there has not been an effective way to use them, or is there anticipation it will happen?***
Dr. Klein: The main reason for putting up these constellations is to serve a large number of unserved markets around the world with Internet and cellular connectivity. Over 3.5 billion people around the world have no access to the Internet and this market potential is what attracts satellite service providers. Existing GEO (geostationary) satellites have long latency (signal from the satellite to the grounds and back takes too long) and the idea is to replace this long latency with something similar to fiber optic technology or close to it to make it possible to offer services over satellite that have the same benefits as those offered by terrestrial service providers with as low a latency as possible. The idea is to reach as many people around the globe as possible and offer them high bandwidth services with the use of satellites.

CEOCFO: ***Would you tell us about iNetVu®?***
Dr. Klein: iNetVu® is a trade name of the C-COM Satellite Systems. We manufacture what we call “on the pause” antennas that are called iNetVu. There are over 30 different models. Some are vehicle mounted antennas, others are transportable or flyaway antennas which are easy to assemble and transport. We also manufacture Fixed Motorized antennas that are actually not vehicle mounted and not flyaway but are mounted on a pole similar to standard VSAT antenna, but have the ability to move on the pole in azimuth and elevation. These antennas we call “on the pause”, which means that in order to deploy them the vehicle has to be stationary and you have to stop to use them. You cannot use them while the vehicle is moving so the terminology used is “on the pause”. They are all called iNetVu, but they have different model numbers because some of them are as small as 75 centimeters and some are as large as 2.4 meters. They are called iNetVu 75, iNetVu 2.4, etc.

CEOCFO: ***What is the competitive landscape?***
Dr. Klein: There are competitors in the market place, but we see less and less of them as those who have bowed out were unable to compete with the rapidly advancing technology and the demands of constant change. The other reason is their inability to deliver large number of systems when it is required as they do not have the financial resources to manufacture large numbers of units in a reasonable time. The market is divided into commercial and military segments for these types of products. C-COM is mainly in the commercial segment of the market with ability to deliver large numbers of high quality cost effective and reliable

antennas in a short period of time. With over 8000 antennas deployed worldwide we are the number one provider of antenna systems to the commercial market place with the oil and gas industry being one of our largest customers, followed by disaster management and cellular backhaul. We have also MIL SPEC (Military Specification) customers around the world, who prefer to buy a high quality commercial product at a fraction of the cost over high-priced mill spec product.

CEOCFO: ***Would you tell us about the oil and gas industry and how it is changing for you now?***
Dr. Klein: Fortunately for us this business is back and we are selling a large number of antennas to this vertical market again, after 2 years of draught. We are now seeing again a surge of orders from the Middle East, Africa, the US, Russia and Australia from a market that has been extremely quiet for 2 years. All of our large customers are back and buying again.

CEOCFO: ***What is involved in maintenance of the antenna?***
Dr. Klein: The antennas have been designed to be extremely robust so there is only minimal preventative maintenance required. With the older generation antennas, a periodic greasing is recommended (every six months or a year depending on the environment they are deployed in). The newer generation antennas do not require any maintenance. If you are using the system in the Sahara Desert, it is recommended that occasionally you blow out the accumulated sand, because ultimately it gets gummed up. Most of the end users rely on our resellers to provide the maintenance and support. We have over 500 resellers in 103 countries who install and maintain our antennas for us.

CEOCFO: ***Is this the type of product where people go for the latest and greatest and want constant upgrades?***
Dr. Klein: This technology is not something that is constantly replaced as it is designed to work reliably for many years and rather than replacing the antennas, new antennas are added as demand increases. We see units replaced after 5 years to make sure the user has a reliable, most up to date product, but we are also seeing product in the field that has been working reliably after 10 years of use.

CEOCFO: ***What type of inventory do you need to maintain or do you manufacture to order?***
Dr. Klein: No we do not manufacture to order. We have a large inventory of over $4 million. We are probably the only ones in the industry that can ship within days rather than multiple months. We maintain this inventory because we know that when a disaster hits or an oil and gas exploration company needs to move on to the next project that they have finally approved, they do not want to wait two or three months for product that they need now. Because the company has no debt and almost $20 million in working capital, we can afford to sit on $4 million worth of inventory. We generally build 200 to 300 antennas at a time and inventory these for this reason, so that when customers need to place a large order as it happened when the tsunami hit Japan and destroyed over 300 cell towers instantly, we were able to ship replacement antennas to provide cellular backhaul in a matter of weeks rather than in many months.

CEOCFO: ***What surprised you as C-COM has grown and evolved?***
Dr. Klein: What surprised me initially, is that the business that we started was expected to attract the consumer. The actual business opportunity

turned out to be in the commercial markets space, because there were no products that were reasonably priced with reasonable performance for this market, so that market did not exist but there was demand for it in this market segment. The only segment that existed before was the military upper-end, very expensive and a news-gathering type of a market. We have actually developed the commercial market around the world that seems to be a good vertical market. It is not a huge market, but it is a global market with good opportunities. The company has had thirteen consecutive years of profitability; it has no debt, pays dividends to its shareholders and has a solid working capital base. It makes it possible for us to continue delivering high quality cost effective products to our customers and allows us to continue developing new and exciting products and technologies for the satellite communications market space.

CEOCFO: ***Why is it still so exciting for you?***
Dr. Klein: One of the reasons is because I started the company and I want to see it evolve and continue to grow. With our new phased array technology coming along we expect that this technology will change the company in a positive way into a new enterprise with new products and new opportunities. There are 3.5 billion people in the world who still do not have access to the Internet. The only way to get it to them in a fast way is via satellite. I am hoping that this new electronically steerable phased array antenna that we are developing, will make it possible to deliver Internet to those billions who have no access to it today and open new opportunities to them through access to technology.

CEOCFO: ***Would you tell us how you are working with the University of Waterloo?***
Dr. Klein: The technology is being designed and developed at the University of Waterloo. It is financed partly by C-COM with assistance of the Canadian Government. C-COM owns all the intellectual property of the design. We believe this arrangement is a win-win for all of us as we will all benefit from the development of this innovative technology.

CEOCFO: ***Why does C-COM standout? Why should C-COM standout?***
Dr. Klein: I think we are one of the very few in the world developing this innovative technology. There are others who are working on a different frequency band but probably we are the only ones working on Ka-band and are very close to developing this technology in this frequency range, which is very difficult technology to implement. There are others who are working in the Ku-band range but we believe we are very close to having this product developed to the point that we can demonstrate that it works and that it can be manufactured in large quantities at a reasonable price. We believe that many new vertical markets will be created that do not exists today using this new satellite antenna technology that will make it possible to deliver high speed Internet over satellite using the latest generation high throughput LEO/MEO and GEO constellations. Vehicles, planes, ships, and ultimately consumers will be able to access these constellations using our antenna systems and make it possible to deliver tremendous amount of bandwidth that these customers would be looking for.