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CTO Letter to Shareholders

Dear Shareholders,

As Chief Technology Officer and co-founder of Sky and Space Global, I would like to introduce myself to you, and take this opportunity to provide you with a deeper level of understanding of the many significant technical achievements, extensive developments and breakthroughs our Company has achieved over the past two and a half years.

Sky and Space Global is on the cutting-edge of the space industry, leading the way with world-class innovative research and development, driving real progress. However, several recent discussions with shareholders highlighted a lack of visibility on many of our notable technology achievements by our highly capable and extremely talented team.

In this letter, I would like to share with you, information on some of the numerous parallel technology projects we run daily and our key achievements since the launch of the Three Diamonds almost two years ago.

I will also share some of our technological breakthroughs and achievements that ensure Sky and Space Global can provide the best end-to-end nanosatellite network solution to our existing and future customers.

Firstly, a bit on my background. I have been working in the space industry since 1995, as a satellite operator, systems engineer, and lead system architect of geostationary communication and earth observation satellites. Since 2006, I have been designing, building and operating nanosatellites. And since 2010, I have been consulting to the space insurance industry, performing risk assessments and failure analysis.

From late 2011, with the inception of narrowband communication constellations, I have been leading a team of world class scientists and engineers in designing, refining and perfecting the world's first fully autonomous Internet Protocol (IP) based space network. This network is at the core of Sky and Space Global's unique proprietary technology solution.

So, what does Sky and Space Global do?

In one word – Infrastructure!

Our small group of experts (about four engineers per project on average and one salesperson per continent) are "building communication roads" in space. We envisage the entire scope of work and develop all network related aspects so our technology can be translated to business. We have built a robust concept of operations (CONOPS) for the entire end-to-end data transfer (including how invoices are generated, and how customer data is stored, and managed).

We are also running several more projects to manage our own satellite operations such as: establishing all ground infrastructure needed for, expanding the Satellite Operating Center (SOC) and building the Network Operating Center (NOC), and setting up the operations team required for such constellation operations.

On top of all that, our marketing and sales team is constantly converting leads to contracts, and the fact we have more than 40 signed agreements is not trivial. This is a HUGE confirmation from the market that we're on the right path and there's a very strong need and demand for our services.

The Three Diamonds – Site survey from space, while sealing future deals

Since launching the 3.1kg Three Diamonds nanosatellites two years ago, Sky and Space Global has leveraged them as a tool in ways we expected and some ways that we could not have foreseen.

We have achieved significant technology risk reduction, by performing all the world's firsts on nanosatellites (details can be found in our ASX announcements), including flying the Three Diamonds in a steady formation in space. We have used the Three Diamonds constellation as a demonstration of our network's capabilities, to show potential customers what Sky and Space Global is able to do and support the signing of sales contracts and other agreements.

We have also been able to use the Three Diamonds for business intelligence spectrum monitoring from space in order to map frequency usage by ground and space systems in our future service zones.

The spectrum monitoring task, which was never intended to be one of the Three Diamonds' mission goals, is equivalent to performing a site survey for real estate prior to commencing the build process.

The Three Diamonds have been a success for Sky and Space Global. They have exceeded our performance expectations in what they have been able to showcase.

Super strong lightweight canisters – sending the Pearls safely into space

The Pearls presented a new standard in the global space industry, an 8U, 150 Watt, 3 meter-wide satellite. No-one had ever before successfully launched such nanosatellites into space.

This innovative product required our engineers to find a safe and secure way to design a launch canister that can be attached to a variety of launchers, some yet to be proven and flown.

Since the canisters are dead weight, meaning it is mass we pay for at launch but is non-revenue generating, it is extremely important to keep its weight as low as feasible while maintaining an extremely strong structure that can endure the tremendous acoustics, vibrations and shock experienced during launch.

Current existing canisters are bulky, heavy aluminum boxes. Sky and Space Global's solution was to find a manufacturer that can comply with our high standard of near impossible specifications. D-Orbit, from northern Italy accepted the challenge and with carbon-fiber composite materials and a design used for electric Formula-1 racing cars, they managed to design, test and qualify the strongest, lightest canister in the new space industry available today.

Autonomous station and orbit keeping algorithm – auto-driver in space for the satellite while optimizing fuel consumption

Controlling the Three diamonds in a formation without propulsion, is a challenge the Sky and Space Global operations team dealt with very well (Blue, Green and Red keeping a distance of 650 km to 800 km from each other to assure payload overlap).

Controlling more than 200 nanosatellites in five different orbits, maintaining their relative distance with an ability to perform avoidance maneuvers if required, and providing 24/7 coverage service is a very complex challenge. It requires either a very large operations team, or a cutting-edge innovative autonomous algorithm that allows the nanosatellites in the constellation to inter-connect and maintain their relative location and distance (a term called station keeping).

Sky and Space Global is always aspiring to maximize automation and reduce operational expenditure. And so, in the last year and a half we have developed, with the aid of a group of world-class aerospace engineers from SCISYS Darmstadt, an autonomous algorithm that allows satellites, for the first time, to autonomously maneuver by sharing information and making group decisions to keep the constellation up and running and avoid collisions with other space objects. This algorithm is already being tested in a system-of-systems super-simulation.

System-of-systems super-simulation – Bringing the network to life prior to launch

In order to evaluate and analyze the expected network's Quality of Service, which is crucial information for our sales and marketing team when closing the Service License Agreement in a contract, a super-simulation was specified, designed and built.

This system-of-systems simulator, which will run on multiple cloud processing servers in parallel, is one of the most complicated ever being built. It allows Sky and Space Global to run network performance check scenarios, which include more than 200 satellites flying through space, and more than a million users accessing the network across the globe.

When operational, it will allow Sky and Space Global to validate expected waiting times, availability, voice call quality (including international and cross continent and Public Switched Telephone Network landlines), gateway bottlenecks and more.

The highlight of the breakthrough we achieved working on this super-simulator with the UK based SCISYS Ltd and our Software powerhouse Sky and Space Global (Poland), is the fact the cloud processing simulator uses the actual flight software in its simulated satellites. This is a unique and powerful way to validate network performance and flight software all at once, significantly reducing operational risks and costs.

Ground terminals – Connecting the users on the ground with the network, at the lowest cost possible

SAS Network ('SASNet') is a sum of all its parts, which includes the space segment, the network infrastructure, and the ground terminals, which are the means in which customers and users access the satellite communication services.

The challenge of designing a small, portable, resilient and low-cost satellite communication terminal is not trivial, and requires a great deal of ingenuity.

The terminals need to endure harsh environmental conditions, consume low power and be lightweight to maintain portability, while keeping specified performance in a secure and safe manner.

Sky and Space Global approached numerous satellite communication terminal manufacturers to come up with a cost-effective suitable design. However, this turned out to be quite challenging. High-quality and reliable, doesn't usually suggest low cost, but for us this was a "make-or-break" condition.

Ten dollars' difference in terminal cost is not a lot, but when you intend to manufacture hundreds or thousands of these devices it becomes very significant. This is why, after searching the globe, screening proposals and talking to engineers, we managed to narrow down our options to two manufacturing candidates that were found to be suitable for our commercial needs.

Software powerhouse – Six software projects running in parallel

In order to build the world's first full IP based spaceborne network, Sky and Space Global had to "re-invent the wheel" and spin-in cellular solutions into 30,000km/hr flying routers we sometimes call "Nanosatellites". This is why we had to develop our own proprietary software product on all system elements that include:

- Space segment software
    - User management (authentication, usage bookkeeping, priority handling, etc)
    - Dynamic resource allocation to the number of active users at any given time
    - Modem control using ultrafast FPGA (Field Programmable Gate Array) processing
    - Optimized Dynamic Routing through the network to latency (think flying cellular towers thousands of kilometers apart)
    - SAS Unique Header Compression which is lighter on resources and provides a better header compression than competitors (allowing more data transfer and better channel usage)
    - SIP (Standard Internet Protocol) compressor, which allows SAS to use SIP while reducing in up to 90 percent the bandwidth costs.

- Ground segment software
    - SAS External Users Server to allow users connected to GSM and WiFi to communicate with users connected to the satellites
    - SAS Gateways to provide two-way fast and secure communication with customers servers, mainly for IoT and M2M services, but also for VOIP services
    - SAS customer service management, to allow customers to manage their account, user's data and usage.

- User applications
    - "Chatellite" mobile app: used by mobile devices such as phones and tablets, to conduct phone calls, send and receive messages including attachments, perform financial transactions (using 3rd party apps) and sending and receiving voice recording (PTT style)
    - Ground terminal application: to allow hotspots and IoT terminals to communicate in an effective and safe manner (including cyber security protection layers).

Understanding the enormous challenges ahead, Sky and Space Global decided to build its own software powerhouse, in order to maintain full control over the "brains" of our network.

Anyone with deep pockets, can purchase hardware and launch satellites… having them function like ours, well that is a massive challenge and achievement.

Summary

The goal of this letter was not to provide accolades for Sky and Space Global, rather to provide you with a better understanding of the substantial technological breakthroughs and achievements we have had and continue to drive towards. In many aspects of commercial space endeavors, Sky and Space Global is at the forefront, and for some we are leading and setting the tone.

We are not resting, we push ourselves to always be on the forefront of technology and innovation while evaluating processes and performance so we can learn and improve… after all we're changing the world.

But it is not easy to improve the world and do something no-one has done before, to make history and build something out of nothing. Sky and Space Global's talented team has been able to lead and be the first in almost every aspect of the emerging commercial nanosatellite communications sector. We are focused on building a great business, one that will also have a lasting legacy that will improve the world and connect us all.

With utmost respect,

Meidad Pariente
Co-Founder and CTO