

## **08 October 2014 Official opening of the Gemini cGMP facility**

### **Chairman's Speech**

Mr Lai, fellow board members, honorable guests, friends and colleagues,

I would first like to welcome all of you to the official opening of PRIME Biologics Fractionation Facility – South East Asia's first plasma fractionation plant. This is a special day for the company after a long route to PRIME's establishment in Singapore using our patented PRIME technology. The route taken was one attempted by the brave and treaded and dreaded by many. The success of any company comes because of perseverance and sheer focus of its Principals. To this end I would like to introduce my partner in this venture John Manusu. John and I have trodden many roads and jumped over a number of obstacles to make PRIME happen. There were many occasions when I wondered if we would ever succeed. Neil deGrasse Tyson, the esteemed US physicist once said "The good thing about science is that it is true whether or not you believe in it." The same I guess can be said of technology and its uses in the modern world. PRIME was something a lot of people could not believe would actually work. Well it does work and it is working here in Singapore.

I do not want to give the impression that PRIME was something that involved only the two of us. In reality It all started some 30+ years ago with the initial invention by Dr Joel Margolis. In 1984 when, for a NASA programme, Dr Margolis invented the separation of protein molecules using an electrical environment or tangential flow Electrophoresis. Over many years there have been a number of notable Scientists involved in making Dr Margolis' invention a commercial reality. The prominent of these include Dr Perry Manusu, Professor David Solomon, Dr Kailing Wang, and myself who have invested their lives to bring Joel's dream to a technological reality. Every scientific invention needs commercial champions. For PRIME there have been three individuals; Perry Manusu, John Manusu and myself who have shepherded, funded, directed, urged and cajoled the PRIME Technology to commercial reality. Along the way we have been helped by Goh Thee Woon, a Singaporean who was instrumental in getting assistance from Singapore authorities to establish PRIME here. There have been a number of investors who have seen the potential of the PRIME Technology and funded sometimes way beyond their means; most notable of these is Mr Ming Chiu from Sydney. Recently, Mr Ronald Liew is another investor I must mention. Behind all this there have been the tireless support of our wives and families. I cannot even begin to express our thanks to Hazel, my wife, and Rosemary Manusu who is John's wife.

We are, however, here today because a significant investor was ready to believe in the technology and realise its immense potential. I want to thank Xeraya Capital Labuan for believing in us and supporting us and helping us bring alive our vision. Xeraya's web page notes that in its origin Xeraya identified that startups in the Life Sciences need agile, capital support in the form of private equity and venture capital. So they started thinking about a way to fulfil those needs. Under Khazanah Nasional Berhad, the seeds were planted for Xeraya. The idea was simple: Create a firm focused on bringing Life Sciences breakthroughs to humanity. The firm would have a three-pronged vision: react quickly to opportunities, take a long-term view on investments, and ensure portfolio companies make a difference in the lives of Malaysians and people around the world. Xeraya's vision in reality parallels PRIME's

and it is clear that this technology will ultimately save a large number of lives – not many companies can boast this aim or reality. Xeraya’s stated vision would embody our philosophy in PrIME which clearly articulates safer plasma fractionation through innovation. I would like to thank the Xeraya Board including their Chairman Dato’ Ooi Sang Kuang and their CEO Mr Fares Zafir for not only for their presence today at this opening but also their support. This visionary investment will transform the South East Asian Emerging Nations into self-sufficient plasma product manufacturers in line with the WHO mandate for the use of plasma products. Ultimately, our aim is there will be fractionation plants like this one in Asia, the Middle East, Africa and the rest of the world. I cannot go past this appreciation without mentioning Aditya Puri from Xeraya who sits on our board. Aditya has been punishing in his due diligence of the project but also for his advice and support of our vision.

I would also like to thank JP Capital Prime Asia especially their Chairman Mr Peter Tan for their investment and providing the vehicle through which some of our long suffering supporters could invest in PrIME. Finally, I want to thank the Singapore EDB for their Innovation Development Scheme Loan which allowed us to get the Gemini facility which kick started our Project. This \$1m soft loan was visionary in its granting as it allowed a demonstrator facility to be set up in Singapore and to use the facilities and regulatory structure that Singapore provides for not only itself but for the region.

There are 3000 proteins in liquid gold or human plasma. Out of this only 15 or so proteins are used in clinical therapy. Blood plasma products represent a US\$11.7B global market of which Marketing Research Bureau (MRB) estimated US\$1.7B is sold in Asia including China and India<sup>1</sup>. The challenge in this region has been obtaining safe plasma in quantities that the bigger companies can process with commercial success. Ideally, the Asian scenario affords the processing of around 50000L of plasma annually compared to the at least 300000L that is required using currently available technology. The PrIME technology allows us to process Asian type batch sizes of plasma at a commercially viable level and also allows us to use plasma that is currently discarded because it is regarded as unsafe. This first South East Asian Plasma Fractionation Plant will use the latest of available technology to achieve this. To this end we have been working with GE Healthcare to develop a process which we call PrIME Plus. PrIME plus is PrIME Biologics know how which incorporates GE equipment and technology at the front and back end. We hope to validate and register the cGMP Gemini facility by December of this year. We hope to be able to start our clinical trials by early next year and for products to be registered with the Health Sciences Authority of Singapore the following year. This plan will run in parallel with OEM processing of plasma from other neighboring countries.

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<sup>1</sup> Worldwide Supply and Demand of Plasma and Plasma Derived Medicines Patrick Robert Marketing Research Bureau article on Iranian Journal of Blood and Cancer Volume 3 Number 3 2011.  
[http://www.ijbc.ir/browse.php?a\\_id=205&slc\\_lang=en&sid=1](http://www.ijbc.ir/browse.php?a_id=205&slc_lang=en&sid=1)

GE is represented today by

- Stuart L Dean (GE Global Operations)  
Chief Executive Officer - GE ASEAN, Global Growth Organization
- Azli Mohamed (GE Global Operations)  
Director, Growth Initiatives & Key Account, GE GGO ASEAN – Malaysia
- Olivier Loeillot (GE Healthcare)  
GM Bioprocess Asia & GM Enterprise Solutions Global
- H N, Vijayasimha (GE Healthcare)  
General Manager - Life Sciences, ASEAN
- Nihir Parikh (GE Healthcare)  
Business Development Manager, Enterprise Solutions, Asia

Again thank you for your presence and support and partnering us in bringing this technology to the world.

I have spent this speech thanking a large number of people. My final round of appreciation go to members of our Board and our staff in Singapore and Australia where we exclusively manufacture our patented PrIME membranes. We do what we do because of the staff of PrIME. Each and every one of them are committed members of our team and are working tirelessly to make this project a success.

My very sincere and heartfelt thanks to my business partner John. One day John and I will have to write a book. In it we will have to highlight our highs and lows and believe me there have been many. I still remember the day we were told that the investment committee of Xeraya had agreed to fund us and we both sat in our apartment too scared to celebrate.

Welcome to our facility.

Welcome the first South East Asian Plasma Fractionation Plant.

Welcome to the first commercial use of PrIME +.

Welcome especially to a project that will change the way plasma products are used in emerging countries.

Welcome to a project that will benefit humanity.

It is my great pleasure now to introduce our Guest of Honour, Mr Kevin Lai, Executive Director, Biomedical Sciences and Consumer Businesses, Singapore Economic Development Board. He joined the Singapore Economic Development Board (EDB) in 1999. During his time in EDB, Kevin spent 4 years in New York as Centre Director before returning to Singapore to head up the Medical Technology industry group. He was again posted to London in 2009 as the Regional Director for Europe. Kevin graduated from the University of Sheffield, UK with a Bachelor's degree in Chemical Engineering (Hons). He is married with a son.

I would to invite Mr Lai to say a few words and thereafter open the facility.