Vocational Training Council

Electronics and Telecommunications Training Board

Report on the 2013/14 Delegation Visit to Germany

Background

      In accordance with its 2013/14 programme of activities, the Electronics and Telecommunications Training Board (ECTB) undertook a 6-member on a 7-day delegation visit to Germany. The objectives and areas of interest of the visit were as follows:

Objectives of the Delegation:

(i)   To keep abreast of the latest technological development related to the electronics industry and telecommunications industry, especially in the areas of green electronics, e-health & medical, cloud & big data, mobile technology, industrial Internet, smart city & home and ICT (Information Communication Technology);

(ii)   To exchange experience and views on manpower planning, life-long training and measures to meet the changing manpower training needs of the electronics industry;

(iii)   To study company and government initiatives for meeting the latest developments with training needs; and

(iv)   To explore the social status of engineers in the society; and

(v)   To explore the future development of the electronics industry.

Areas of Interest of the Visit:

1. Trends and new development of ICT (Information Communication Technology)
2. Cloud computing and large data centre
3. Trends and new development of green electronics
4. Trends and new development of chipset and solution
5. Trends of smart phone/tablet PC and Apps
6. Energy saving and recycling technology
7. Medical electronics and telemedicine & eHealth
8. Smart city and smart home
9. Wireless broad band network and long term evolution (LTE) & 5G
10. Trends and new technology of the AVC digital network
11. HD Video Conference and IP video conferencing system
12. Other advanced technologies
13. The training needs required to meet the latest development of the electronics industry

2.   The visit took place during the period from 10 to 16 March 2014.   The itinerary of the delegation visit is at the Appendix.

The Delegation Team

3.   The delegation comprised the following nine members:

(i)   Mr YEUNG Chi-hung, Johnny, Chairman of the ECTB and Leader of the Delegation;

(ii)   Dr TONG Wai-kwok Aaron, Vice-Chairman of the ECTB;

(iii)   Mr LAM Lun-lee Mark, Member of the ECTB;

(iv)   Mr TSE Hung-keung Christopher, Member of the ECTB;

(v)   Dr HUNG Kim-fung, Measure, Member of the ECTB; and

(vi)   Mr CHENG Tai-man, Secretary of the ECTB; and

(vii)   Dr YIU Hing-leung, Head, Electronics Cluster of Hong Kong Science & Technology Parks Corporation.

The first five members and the Secretary represented the ECTB while Dr YIU Hing-leung was an industrial member from Hong Kong Science & Technology Parks Corporation.

Company Visits

4.   The delegation visited the following organizations (a to b) and over 15 exhibitors (c to q) at CeBIT 2014 in Hannover, Germany

       (a)   Industrie- und Handelskammer Hannover
       (b)   Deutsche Messe AG
       (c)   BITMi Pavilion
       (d)   Cortado AG
       (e)   Fraunhofer
       (f)   Bayern Innovativ
       (g)   Rohde & Schwarz SIT GmbH
       (h)   Cuculus GmbH
       (i)   Vodafone GmbH
       (j)   Sensing & control
       (k)   Shoutr labs
       (l)   Viewsy
       (m)   Sablono GmbH
       (n)   Speedment AB
       (o)   SOMA Analytics
       (p)   Cosinuss GmbH
       (q)   Mint Labs

5.   With its attractive themes and trends of shown technologies, the delegation mainly visited CeBIT 2014, the world's largest and leading IT exhibition in Hannover, Germany.   Before the visit, with assistance of delegates, the Secretary prepared a list of selected companies at various sectors of the industry for the delegation to visit at the exhibition.   An ample time was also allocated for delegates to tour around the exhibition to find out their own interests that the delegation could get the most benefit of the exhibition.   The other aim of the delegation visit was to explore the famous "Dual Education System" in Germany.   With the referral of Ms Sabine Florian, Executive Director of German Industry and Commerce Limited, German Chamber of Commerce Hong Kong, the delegation visited Industrie- und Handelskammer Hannover on 11 March. The delegation had a fruitful discussion with the host on manpower training and planning as well as lifelong training of the industry.

6. During the visits to selected companies and at the exhibition, the delegation exchanged views with them on the latest development and training needs of the electronics industry. Also, during each meeting, a souvenir, as a token of appreciation, was presented by the Leader of the delegation to the company. Afterwards, a group photo taking was taken to mark the memorial gathering.

Industrie- und Handelskammer Hannover (http://www.hannover.ihk.de/)

7. The delegation visited **Industrie- und Handelskammer Hannover** (**IHK**), the chamber of industry and commerce of Hannover City on 11 March, Tuesday morning. Dr Gert Specacek, Berufsbidung, Ms Natalie Rudat, Anerkennungsberatung and Mr Wilfried Janke, Berufsbidung gave a warm welcome to the delegation. As requested, Dr Specacek gave a brief introduction of the "Dual System of Vocational Training (DSVT)" in Hannover to the delegation.

8. A video on "Vocational Training in Germany" was first shown to the delegation to give them a general picture of the DSVT. Dr Specacek then introduced the key aspects of the DSVT: the training in a company and learning at a school, roles of the tripartite – **IHK** (government), company and trainee, the assessments of training, advantages of the training, outcomes of the training and the concept of lifelong learning.

9. On top of a nine-year general free education in Germany, there are 345 training occupations in Hannover offered by the DSVT to the youth, which include industry, commerce, administration, skilled crafts, agriculture, health and others. The DSVT usually lasts for 2 to 3.5 years for a youth to be converted into a skilled worker in a specific trade. The dual parts of the system consist of training mainly provided in a company and complemented by teaching in a part-time vocational school. The learning at both parties is governed by different but coordinated regulations. At present in Hannover, a total of 7,300 training companies in various trades and 27,000 trainees have joined the DSVT. The population of the City is about 520,000. There are about 9,000 intermediate examinations and 11,700 final examinations to be conducted per year for the 27,000 trainees.

10   The trainee usually has a probation period of four months and receives 3 to 4 days per week training in a company, mainly at the workplace according to the training programme and bound by a training contract as well as monitored by a mentor.   On the top of paying a monthly allowance to the trainee, the company pays the costs of vocational training and a training allowance to the trainee.   The monthly allowance is about 600 Euros for the first year, 650 Euros the second year and 700 Euros the final year.   The vocation schools are financed from public funds and do not charge the trainees the tuition fees.   The trainees attend part-time training courses at vocational schools, usually 1 to 2 days per week on average, on the basis of an approved framework curriculum. General subjects, accounting for one-third of the duration and vocation knowledge for the rest two-thirds of a specific trade are taught at school.

11.   The vital assessment for each trainee to complete the DSVT is a two-step final examination to be conducted in his final year of the training.   It is conducted in two consecutive steps: Part 1 taken place before the second year of studies elapses and Part 2 at the end of the vocational programme.   The duration of Part 1 examination consists of 8 hours with the inclusion of 90 minutes allotted to accomplish written assignments as well as a maximum of 10 minutes for technical cas-study discussions.   The Part 1 examination also tests trainees' abilities to:

    a.   evaluate technical documentation;
    b.   assemble modules & components;
    c.   evaluate safety levels of sub-systems and examine mechanical & electrical safety provisions;
    d.   examine functions, set and measure performance data; and
    e.   deliver equipment to customers and develop technical manuals.

The areas of expertise to be evaluated in Part 2 examination are as below:

    a.   Work assignment – option 1: 20 hours and option 2: 14 hours;
    b.   Work scheduling (105 minutes);
    c.   Functional analysis (105 minutes); and
    d.   Economic and social aspects (60 minutes).

12.   The **IHK** acts as an intermediary and has the following tasks:

a. Advising companies and young people on vocational training;
b. Verifying the aptitude of companies and training instructors for achieving the goals of the DSVT and maintaining its good quality;
c. Keeping a vocational training register - registering training contracts;
d. Cooperating with schools;
e. Settling disputes among companies and trainees;
f. Selecting qualified instructors and examiners; and
g. Organizing examinations and issuing certificates.

13.   In addition to the lowest youth unemployment rate (7.7%, at average rate of 23.4% as at July 2013) in Germany among the EU (European Countries), Dr Specacek concluded the merits of the DSVT to the industry are to:

a. Secure the skilled labour required by the industry;
b. Reduces costs of training when hiring s new worker;
c. Increases motivation and loyalty to the company;
d. Meet job-specific qualifications; and
e. Guarantee productive performance of trainees.

The advantages for the young people joining the DSVT are:

a. Good prospects on the labour market;
b. Recognized certificate;
c. Practical orientation;
d. Payment of an allowance; and
e. Having a solid foundation for further study leading to a respected social status – qualified engineer.

14.   Afterwards, the delegation introduced the vocational training and the newly initiative on "Pilot Training & Support Scheme" offered by VTC in Hong Kong. The two parties then exchanged views and comments on the vocational training in Germany and Hong Kong.   The delegates learnt that both the trainers and trainees were usually engaged in lifelong learning by receiving continuing vocational training.   It was also a trend to do so in Germany.

Deutsche Messe AG (http://www.messe.de/) and **CeBIT 2014** (http://www.cebit.de/en/)

15.	Before the delegation visit, through Ms Elsa Lin, Marketing Manager of the Deutsche Messe Worldwide, Hannover Milano Fairs China Limited, Guangzhou Representative Office, the Secretary met Mr Bernd Heinold, Head of Sales, CeBIT of Deutsche Messe AG (DMAG) and Mr Guido Mack, Project Director, CeBIT of DMAG during their visit to Hong Kong Electronics Fair (Autumn Edition) in October 2013. Since then a close link was set up between the three parties, the ECTB, DMAG and its Guangzhou Representative Office. DMAG is a semi-government organization in Hannover run by a board of directors in a private firm style. Its main duties and function are to conduct various exhibitions for various trades in Germany throughout the year and some of the shows are also run overseas.

16.	The delegation received a high-level greeting at Hermes-Lounge at CeBIT 2014 by the Board of Management of DMAG. First, Mr Wolfgang Pech, Senior Vice President together with Ms Eile Zheng, Project Executive of the Guangzhou Representative Office, gave a very welcome to the delegation at 9:30 am. Mr Pech then introduced CeBIT 2014 to the delegation. He said that both the organizing country, German and the Partner Country, Great Britain were very concerned with the exhibition that British Prime Minister David Cameron together with German Chancellor Angela Merkel CeBIT attended the opening ceremony on 9 March. Mr Pech added that this year CeBIT was reformed to be the world's top business-only event for the digital industry with its following special featured themes:

   A. Trends
1. Big data & Datability
2. Mobile
3. Security
4. Social & Cloud
5. Game-changing Technologies
6. Startups – CODE_n
7. IT jobs

B. Display Categories and Career

a. Communication & Networks
b. Digital Business Solutions
c. ECM & Input/Output Solutions
d. ERP 7 Data Analysis
e. Global Sourcing
f. IT Infrastructure & Data Centres with IT services
g. Research & Innovation
h. Web & Mobile
i. Career - IT Professionals
j. Career - IT Trainees – Technology To Youth (Tec2You)

C. Awards & Competitions

1. CODE_n
2. LIDA Award
3. CeBIT Innovation Award

D. Partner Country 2014: Great Britain

17.   Mr Pech also mentioned the new CeBIT strategy: a focus mainly on trade visitors and a stronger emphasis on international participation. If the strategy was successful, it would become the same one for the years to come. Afterwards, a group photo was taken. The delegation was then escorted by Mr Jan-Michael Muller, Protokoll of the DMAG, and Ms Zheng and Ms Lin by taking two VIP-buses to start visiting 12 selected companies at the exhibition, which were well established before the visit but excluding two planned companies as they were not available to meet the delegation.

18.   After the visits to five companies in the morning, Mr Heinold and Mr Mack together with Mr Muller, Ms Zheng and Ms Lin held a welcome luncheon with the delegates at the main conference room for Board of Directors in Hermes-Lounge. Mr Heinold and Mr Mack were happy to meet the delegation as they remarked that the delegation presented the major trade associations, big firms and science and technology parks of the electronics industry in Hong Kong. During the

meeting, the delegates exchanged views on CeBIT 2014 with the hosts and praised them for its successful trasformation by focusing on business users, business solutions and business models in various sectors of the IT industry rather than the traditional product and hardware system designs. Mr Heinold said that they aimed to keep CeBIT the world's leading IT showcase and business event to attract top management, professionals and high technology firms all over the world to participate in the future events.   The Leader of the delegation, Mr Johnny Yeung, presented a souvenir to Mr Heinold and a group photo was taken afterwards to mark end of the activities scheduled for the morning.   Then the delegation started the second part of the activity, to visit seven more firms in different Halls.

19.   Besides the scheduled visits, the delegation also attended the "The UK German Technology Summit" on 10 March afternoon to capture the views of business and politics on the latest technological development as well as opportunities and challenges associated with such development in both countries.   As Great Britain was the Partner Country of CeBIT 2014, a total of 130 British firms joined the exhibition.   On the other side, the delegation learnt that over 500 firms from China joined CeBIT 2014 as exhibitors.   Among them were Huawei and ZTE, the two giant telecommunication companies, providing their customers business to business solutions and models for their products and services.   Trade Development Council with some Hong Kong electronics firms and others from Taiwan were also among the exhibitors.   The delegation remarked that CeBIT 2014 very interesting and was worth attending as advanced technologies (of the themes) with related business solutions, business models and applications were displayed to attract audience.

CODE_n (www.code-n.org) **at CeBIT 2014**

20.   The delegation was introduce and guided by Mr Muller to visit **CODE_n** at Hall 16.   **CODE_n** stands for "**Code of the New**", the DNA of innovation and an international initiative for digital pioneers, innovators and ground-breaking startups.   Initiated in 2011 and supported by GFT Technologies AG (http://www.gft.com/), the goal of this network was to provide outstanding business talents (and their exceptional business ideas) a platform for dialog, and therefore stimulate and accelerate innovation in the field.   The initiative was sponsored by Ernst & Young and the Deutsche Messe AG.

21.   In CeBIT 2014, CODE_n granted the **CODE_n Award** for the third time.   Its motto was "**Driving the Data Revolution**" with a focus on business models which dealt with the vast amount of data were produced every day.   Also, the main sponsor, GFT Group, had offered extreme opportunities for the startups to demonstrate their talent and initial achievements to the industry and the visitors from all over the world.   This year more than 450 participants from 60 countries applied for the award.   Finally, 50 startups from 17 countries were selected as the finalists for the award and each of them was granted a booth at CODE_n. It was a big challenge for the 50 international finalists in this "Startup Oscar" contest that they needed to demonstrate their products/services with their extraordinary business concepts presented to investors, all visitors and the international press.   On the other hand, it created a palpably entrepreneurial spirit.

22.   Everyone was just thrilled by the atmosphere in the hall. However, it was also really a great attraction to visitors that a total of 17,000 people had visited the CODE_n Hall.   The delegation also found the CODE-n exhibition hall was so interesting and attractive by its 2 meter-high terapixel displays (of various brain data) everywhere across 5,000 square meters of space in the hall.   With the guidance of the representative of the sponsored company, GFT Technologies AG, the delegates visited three distinguished international startups: **Salono GmbH**, **Viewsy** and **Speedment AB** from Berlin, Germany; London, UK and Goteborg, Sweden respectively.   Their products were related to the areas of manufacturing & construction, mobility & transportation and

technology & IT respectively. Some delegates later visited three more startups: **SOMA Analytics, Cosinuss GmbH** and **Mint Labs** in the e-Health sector.

23.   The delegates recognized that the young entrepreneurs, mainly developing their business from research projects at universities were capable to build good relationships with large numbers of venture capitals, investors and well established firms. During the meetings, the delegation learnt that the young entrepreneurs, mainly graduates of universities with a PhD qualification in their devoted research areas and usually under the age of 30, were so eager to start up their own business for the following main reasons:

1. Preferring more freedom in their career development;
2. To fulfill their desires of running their own business while young;
3. To achieve own satisfaction and wealth through the success of the business; and
4. Not difficult to get jobs even if failed in the business.

Regarding the difficulties of running a business, they had the challenges below:

1. To sustain their business by acquiring enough income through selling their products or services or doing part-time jobs;
2. Without sufficient marketing skills and experience to develop new markets for their business;
3. To maintain a good relationship with present investor(s) and to seek new ones; and
4. To maintain a good collaboration with founders and partners, especially in cases of different views and directions.

24.   The delegation also learnt that students at colleges and universities were enthusiastic to become professional engineers through the appropriate training. They also preferred to keep lifelong learning throughout their careers. It usually takes four years to complete a degree engineering course in Germany. However, some engineering students prefer to take an industrial training for one to two years after Year-3 to acquire some working experience. This would enhance their

ability and facilitate them to get a preferable job after graduation. The normal annual salary for an engineer with some years' experience is in the range of 40,000 to 50,000 Euros. The professional engineers are usually well recognized and respected by the society in Germany. They have a high and respectful social status with a reasonable income for a better living. All the above together with the systemic training for the youths could be the reasons to make German one of the advanced technologies with high-quality engineering countries in the world.

25.   After the end of the visits to CeBIT 2014, the delegation learnt more about the show from its "End-of-show Report" released on 14 March by Mr Oliver Frese, the Managing Board member of DMAG in charge of CeBIT (http://www.cebit.de/en/press-service/press-releases/pressreleases-deutsche-messe/).   Some of the key points in the report are abstracted as below:

1. Trade professionals accounted for over 90 percent of total attendance;
2. Higher turnout from abroad with 210,000 visitors (trade professionals, journalists and delegates) were from some 100 different countries, like 64% from EU countries, 9% South, East and Central Asia, 7% other western European countries, 7% Middle East, 5% other Eastern European countries, 3% each Africa and Central & South America and others from North America and Australia/Oceania (1% each);
3. Visitors of the top five industrial sectors were: Service providers and independent professions (27%); Software and system providers (19%); IT services, IT consultants & programmers (15%); Government, public authorities & institutions (12%) and Trade (10%);
4. Event generated deals worth some 25 billion Euros, up by 25% over that of 2013;
5. One-third of the attendees was top managers with buying power, while 72% of visitors involved in their organisations' purchasing decisions;
6. The show's sharped business to business focus led to a rise in planned investment volume per trade visitor, from 106,000 Euros in 2013 raised to 134,000 Euros in 2014;

7. The CeBIT Global Conferences providing 70 different charged conference events with 140 speakers had attracted around 3,000 audience;

8. A complete success event as the world's leading IT showcase and business event with revised focus on business users and would retain its 100% business focus to work together with exhibitors and other partners for future growth.

Visiting Companies at CeBIT 2014

BITMi Pavilion (http://www.bitmi.de/)

26.   The first organization the delegation visited in the morning was **BITMi Pavilion**, an association representing around 1,000 IT small and medium enterprises (SMEs). In Germany, the a SME is a company employing less than 255 workers. Dr Oliver Grün, Präsident & Vorstandscorsitzender and Mr Holger Fiedler, M.E.S, Verbandsreferen greeted the delegation at the booth.   Dr Grün introduced the operation of SMEs of the IT industry to the delegates. The SMEs had to pay an annual fee of 100 to 300 Euros, depending on number of their employees. The main function of BITMi was to grant a seal (guarantee) to a software product   In Germany, about 65,000 IT SMEs employed one to five staff. Among them there were a lot of APPs and SAP development companies generating about 1.5 billion Euros per year.

27.   In replying a question on manpower training, Dr Grün said that 85% of the skilled workers employed by their member companies had joined the Dual System Vocational Training before. The SMEs would build their own technical teams through on-the-job training and joining outside training courses if required. Dr Grün praised the Dual System Vocational Training as it provided both trade knowledge and basic practical skills.

Cortado AG (http://www.cortado.com/)

28.   The delegation was well received by Mr Dirk Löwenberg, M.A. Business Director Online Sales & Services at the **Cortado AG** booth.

Mr Löwenberg first gave a brief introduction of the company to delegates. He said that with its unique cloud desktop solutions, **Cortado** provided the complete answer to the current IT trends of virtualization, cloud computing, bring your own device (BYOD) and consumerization. **Cortado** connected mobile, web and virtual desktops with centrally delivered IT resources, enabling flexible, location-independent performance with any device.

29.   Through the features of the **Cortado** product - ThinPrint Cloud Printer of, the delegation learnt that it was a typical application of integration of smart devices or BYOD with the mobile web and the demonstration of its beauty of access convenience, personal and mobility.

Fraunhofer-Gesellschaft (https://www.sit.fraunhofer.de/)

30.   Mr Ruben Wolf, Cloud Computing and Identity & Privacy, Fraunhofer-Institut für Sichere Informationstechnologie SIT and
Mr Gerald Lui, Senior Assistant Director, Strategy & Planning met the delegation at the **Fraunhofer-Gesellschaft** booth.   Mr Lui told the delegates that he was dedicated assigned to welcome them and to introduce them the latest development of products and services of the **Fraunhofer-Gesellschaft.**   Mr Lui said that **Fraunhofer-Gesellschaft**, having research of practical utility at the heart of all its activities was founded in 1949.   The research organization undertook applied research that drove economic development and served the wider benefit of society. Its services were solicited by customers and contractual partners in industry, the service sector and public administration.

31.   The delegation noticed that the **Fraunhofer-Gesellschaft** currently maintained more than 80 research units in Germany, including 60 Fraunhofer Institutes.   The majority of the more than 20,000 staff were qualified scientists and engineers, who worked with an annual research budget of €1.80 billion.   Of this sum, more than €1.50 billion was generated through contract research.   More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue was derived from contracts with industry and from publicly financed research projects.

Almost 30 percent was contributed by the German federal and Länder governments in the form of base funding.

32.   Mr Ruben Wolf and Mr Lui then led the delegation to tour around some key research products in the areas of Mobile e-administration for smart cities; OmniCloud - secure use of cloud storages; InnoVisions - The Fraunhofer ICT Group magazine; Famiun - Multiscreen entertainment and advertisement insertion; Big Data - visualizing large amounts of data; Interactive 3D Book-Explorer and AskMe! – interactive personalized e-assessment.   The delegation remarked the Fraunhofer-Gesellschaft group was a very big and leading multi-national research organisation, which had achievements in various key aspects of the electronics industry as well as IT industry..

Bayern Innovativ GmbH (http://www.bayern-innovativ.de/)

33.   The delegation was welcome by Dr Rupert Tkotz, Gesellschaft fur Innovation und Wissenstransfer mbH at the **Bayern Innovativ GmbH** booth**.   **After a brief introduction of the ECTB, Dr Tkotz first told the delegation **Bayern Innovativ GmbH** located in Nuremberg, was initiated by the Bavarian State Government in 1995.   The company was jointly set up by politicians, science and industry as a corporation for innovation and technology transfer.   He then briefed the delegates the innovation and technology transfer in the main areas of automotive industry, electronics / microtechnology, environmental technology, textile innovation, Bavarian energy forum, life science, medtech & pharma, logistics, new materials and timber industry.

34.   The delegation found that through the support of state government by transferring technologies, the industry could be well benefitted and enhanced their competitive ability.   On the other hand, by the corporation with **Bayern Innovativ GmbH**, the industry could develop their products in a supportive and easy way.

Rohde & Schwarz SIT GmbH (http://www.sit.rohde-schwarz.com/)

35.   Mr Andreas Beierer, Head of Sales Germany and International

Technical Sales and Mr Eric Behrendt, Channel Sales Manager, IT Security greeted the delegation at the **Rohde & Schwarz SIT GmbH** booth.　In view of the tight schedule for the delegation, Mr Beierer gave a quick introduction of the two top secure mobile communication products: R&S®SITLine ETH - Ethernet Link Encryptor and R&S®SITGate - Next-Generation-Firewall.　The R&S®SITLine ETH was the world's first 40 Gbites per second Ethernet encryptor used to secure site-to-site and data centre connections.　Mr Beierer gave a demonstration of the ability of the R&S®SITLine ETH.　Then he introduced the R&S®SITGate, a TopSec Office Gateway, a system employed to secure calls between office and mobile users.　Mr Beierer showed the TopSec Mobile, a system used as tap-proof phone calls made by all leading smartphones (iPhone, Android) and Win 7/8 PCs with the features of VoIP encryption over cellular, the internet and satellite.

36.　The delegates recognized that such range of products were designed to protect networks and end-to-end communications, plus specialized hardware modules employed for highly secure public key infrastructures.　Aiming at a high standard, the systems were approved by the German Federal Office for Information Security (BSI) and had been optimized for ease-of-use and high transmission rates.　Such performance and wide application werethe result of **Rohde & Schwarz SIT GmbH** spending more than 20 years in high-performance encryption and IT security products and solutions.

Cuculus GmbH (http://www.cuculus.net/)

37.　Mr Claus Uellendall , Program Manager, Smart Home Solutions gave a warm welcome to the delegation at **Cuculus GmbH** booth. Through the introduction of the company and demonstration of its product, ZONOS platform, the delegation learnt that the young company was founded in 2007 and since then it focused on the development of server-based Smart Metering and Smart Home solutions.　The initial focus was on the German home market, but in recent years extended to other European countries.　Now it looked for other overseas markets. ZONOS platform was the main core product designed to enable Smart Metering, as well as seamless integration of Smart Home and Smart Grid

applications. It provided graphical user interfaces, scalability and flexibility, and enables easy customization to a customer's specific processes and requirements. The end-to-end solutions enabled grid operators, energy suppliers, and other related parties to upgrade their operations and be ready for the energy transition.

38. Through different demonstrations of the platform, the delegation appreciated that ZONOS Smart Home enabled flexible combinations of the following functionalities:

- Measuring and switching of electrical devices
- Consumption comparison
- Creation of scenarios (e.g. for lighting)
- Temperature and humidity monitoring
- Simulation of presence
- Security functionalities
- Central or individual room heat control

39. Also, ZONOS distinguished itself from other solutions by supporting a wide range of hardware products and technologies, scalability and the ability to integrate with existing system. The best and latest devices and technologies could be integrated in a simple manner to provide end-users with easy-to-use propositions.

Vodafone GmbH (http://www.vodafone.de/)

40. The delegation was well received by Ms Mareike Vanessa Bautsch, Marketing Managerine – Enterprise Cross Channel Marketing at the special booth allocated for **Vodafone GmbH**. Ms Bautsch then led the delegation to different sections inside the booth for the delegates to keep abreast of the latest development of the giant telecommunication company in Germany. The following technological aspects were introduced to the delegation:

a. Security – Secure device management of mobile devices and Secure SIM – 2-factor-authentication and end-to-end encryption of voice and data;
b. Unified Communications – Microsoft Lync and smart

technologies – a collaboration with VoIP, presence, messaging, conferencing and whiteboard;

c. Cloud & Hosting – Showing myMobile anywhere powered by Vodafone and Hewlett-Packard – your office on any device with security and synchronization

d. myMobile anywhere – Eco System – to secure and manage calls and data transfer anywhere using different APPs (enterprise & personal) from App Stores through public clouds and the company's Net/DSL, HSPA +/UMTS and WLAN.

41.   The delegates experienced the extremely fast transfer of data via WIFI and mobile network communications inside and outside nearby the booth.   It showed the power of communication provided by **Vodafone GmbH**.

Sensing & Control Systems (http://www.sensingcontrol.com/)

42.   Mr Samuel Bobbino, Business Development Manager of **Sensing & Control Systems** greeted the delegation at the company's booth.   During the meeting, Mr Bobbino introduced the product, "enControl", an integrated platform providing smart automation solutions for controlling and monitoring of energy management and security at home, office and other venues.   The automation solutions of "enControl" enabled homes and businesses to adapt intelligently to their occupants' lifestyles that users could check in on their homes or businesses from anywhere of the world, program up security routines at the touch of a button, adjust lighting with the flick of a finger, and know who was at the front door before the bell even rang.

43.   The delegation remarked that "enControl" offered intuitive web and mobile apps to help users understand their energy bills and take additional energy saving actions.   The delegation also learnt that such automation system could assist users to control the facilities at home and workplace through their smartphone, tablet or laptop leading to energy saving and better security.   This would be the trend for developing smart home and smart city in a way of convenient, simple, all time and anywhere communication, personal with peace of mind.

Shoutr labs (http://shoutrlabs.com/) -- CeBIT 2014 Innovation Award, First Prize Winner

44.   The delegation was invited to visit the first prize winner (50,000 Euros) of the **CeBIT 2014 Innovation Award** – **Shoutr Labs**.   The three graduate computer scientists, Mr Sebastian Winkler, CEO/Co-Founder together with his two colleagues, Mr Christian Beier and Mr Benjamin Werner, greeted the delegates at their booth.

45.   The hosts explained the operation and demonstrated the function of the winning product **-- app shoutr**.   It was an innovative app facilitates the wireless exchange of pictures and music via smart phones and other mobile terminals in the immediate vicinity.   In providing this service, it established a direct connection between the devices on the basis of WLAN technology without any diversions by way of clouds, servers or other Internet services. The security of the data thus transmitted was guaranteed by their WPa2 encryption.   It seemed that **app shoutr** showed how simply local ad-hoc networks could be used for exchanging data.

46.   This year, the CeBIT Innovation Award granting to the excellent young minds in German IT re-search, was bestowed on three outstanding developments: one each in the fields of design, user-friendliness and man-machine interaction.   The awards were offered jointly by the German Federal Ministry of Research and Deutsche Messe AG and will be accompanied by prize money totalling 100,000 Euros.   The award was a great motivation as well as appreciation to the innovative ideas applied to the product or service.

Salono GmbH (http://www.sablono.com/)

47.   **Salono GmbH** was founded in 2013 as a spin-off from the Technical University of Berlin.   It is now a member of the SAP Startup Focus program and is seed-funded by Hasso Plattner Ventures.   The CEO and co-founder of **Salono GmbH**, Dr Felix Enge greeted and introduced to the delegates their product - a software solution called **BIMtime**.   It was a collaborative scheduling tool using big data to assist organizations

with the set-up of complex construction projects.

48.   Dr Enge said that **Sablono BIMtime**, the first software tool, aimed to create reliable project schedules based on a virtual 3D building model. It associated with Sablono-certified building processes which stored all relevant information on the manufacturing process of every single component.   The result was a significantly more reliable schedule with a thousand-fold increase in the level of detail.   Throughout all construction phases, the schedule remained connected to the 3D building model and was automatically updated even a change or delay was occurred.

49.   In replying a question from the delegate, Dr Enge said that **Salono GmbH** needed to find the right direction, right timing with a good strategy to catch market share in the construction industry.   The challenge ahead was to find ways to maintain the company in a health finance condition and to perform future development of **Sablono BIMtime** to serve sectors with different applications.

Viewsy (https://www.viewsy.com/)

50.   In the meeting with delegates, Dr Odera Ume-Ezeoke, founder and CEO of **Viewsy**, talked about how they used big data to help companies effectively manage physical environments.   He said that **Viewsy** was founded in 2011 in London, UK, and was rapidly growing and already counts clients like Vodafone and ABN AMRO bank.

51.   As it stated "Measure and manage foot traffic like never before", Dr Ume-Ezeoke said that **Viewsy** provided analytics for offline retailers by supplying insights about customer behavior patterns, such as customer loyalty and time spent in the shop.   He added that **Viewsy** came to solve a common problem faced by retailers: understanding customer behavior in physical space in order to manage businesses better.   **Viewsy** also installed discrete passive sensors in store to analyze visitors' movements within and between the client's stores.   This data was anonymized and then securely transmitted to **Viewsy**'s analytics platform, which calculated store statistics on footfall, store visitor flow, and other key metrics.   The

resulting analysis and data was made accessible via the **Viewsy** dashboard and reporting suite. However, if a customer switched off the WIFI connection of his smartphone, then he would not be analyzed while shopping.

52.   Dr Ume-Ezeoke said that their technology had a wide range of applications, including a direct benefit to customers, such as improving store layouts to avoid overcrowding, reducing checkout queue wait times, understanding surge footfall to increase safety (such as in a large arena or football stadium), and enabling better positioning of customer service or security staff. Also **Viewsy** offered retailers the ability to provide an option for customers to opt-in and receive special offers and discounts. In future, **Viewsy** would focus on making sense of the in-store retail environment.

53.   The day after the visit, the delegation learned that **Viewsy** won CODE_n14 Award with a prize of 30,000 Euros. The top four of the contest were **Sablono GmbH**, **Autogrid Systems**, **Viewsy**, and **Cosinuss GmbH**.

Speedment AB (http://www.speedment.com/)

54.   Ms Carina Dreifeldt, CEO of **Speedment AB** gave a warm welcome to the delegation. She then introduced the delegates the technology & IT company which was based in Goteborg, Sweden. The company focused on graph databases and optimization of databases. Its innovative product, Speedment Ace, had raised the standard for high-performance accelerators.

55.   With the demonstration of a fast track car racing, Ms Dreifeldt showed Speedment Ace's ability in database acceleration. Also, it had been successfully deployed on a variety of performs ranging from small, embedded systems to high-performance super servers. Ms Dreifeldt added that the solution Speedment Ace combined the reliability in existing SQL databases with the speed of a graph database and searches in a traditional relational data-base could be made in nanoseconds. The delegation found that Speedment Ace was a database accelerator with

extreme capabilities and a solution built and derived directly from the cloud

SOMA Analytics (www.soma-analytics.com**)**

56.   Dr Peter Schneider, Co-Founder, Research & Development of **SOMA Analytics** greeted the delegation at its booth.   Dr Schneider then gave a brief introduction of th ecompany and its big data product, **SOMA ap**.   **SOMA Analytics** is a company based in London's TechCity and supported by leading universities, researchers & clinicians in the fields of sleep medicine and occupational psychology.   Dr Schneider said that they had the vision to build evidence-based mobile health programmes that really changed the company and its employees – for a better healthy working environment and personal health.

57.   Dr Schneider added that the product, **SOMA app** was an evidence-based mobile programmes to increase employee emotional resilience.   It combined state-of-the-art mobile technology with proven psychological methods from the fields of occupational & positive psychology to provide evidence-based interventions. What it required was the employee's smartphone.   With a demonstration, Dr Schneider added that the **SOMA app** was designed to increase mental resilience and reduce the risk of depression, anxiety & stress of a person**.**   The mental resilience programme built on two essential pillars: turning the smartphone into a measurement device and personalized interventions. Through their smartphone, participants measured their well-being and the SOMA app assisted them in assessing sleep quality and emotions in speech.   Based on these measurements participants received' through charts and tablet results, their personalized tips and feedback how to increase mental resilience.   Tips were provided on evidence-based and concerned in the aspects of sleep hygiene, happiness, mindfulness and personal productivity.

Cosinuss GmbH (www.cosinuss.com)

58.   **Cosinuss GmbH** is a Munich-based German startup which develops high-tech earplugs that help people measure heart rate, body core temperature and arterial oxygen saturation of the blood. The wearable technology created by **Cosinuss GmbH** has multiple applications, being used in fields of medicine, sports, employment protection, and even fertility determination.

59.   Dr Johannes Kreuzern, Dr-lng, CEO of **Cosinuss GmbH** met the delegates and demonstrated the functions of the product – C-SP01, a strapless in-ear heart rate monitor for athletes. It connected to smartphones and pulse watches and the data could be downloaded into a computer for analysis. C-SP01 was designed as a big data application due to the sensors collecting various data about the user in real time which could then be analyzed later on.

60.   Dr Kreuzern added that next generation sensors coming soon could fusion headphones with heart rate monitors allowing althlets to not only listen to their beloved music and track their performance with one gadget but also to get motivational feedback according to their performance directly back into their ear.

Mint Labs (www.mint-labs.com)

61.   Both Dr Paulo Rodrigues, CEO and Dr Vesna Prchkovska, Scientific Adviser of **Mint Labs** (**M**edical **in**novation and **t**echnology **Lab**oratorie**s,** a startup from Barcelona, Spain) met the delegates and introduced them the product, a programme using advanced image analysis algorithms, created complex 3D maps of the patient's brain – " Like Google Maps for the brain". It helped doctors provide a better diagnostic and treatment for patients with brain diseases. **Mint Labs** demonstrated the neuroimaging platform analysis and visualization tools, exploiting big data analysis and new touch-less interaction technology using Leap Motion. The Human Connectome 43x11m, 6.6 Terapixel display at the CODE_n Hall was designed based on massive quantities of data (brain data of Dr Vesna Prchkovska) provided by **Mint Labs** in

collaboration with the Neuroimmunology Program from IDIBAPS.

62.   Dr Rodrigues said that both founders (himself and Dr Prchkovska) of **Mint Labs** met in the Netherlands, where they were doing their PhDs in neuroimaging and developing new brain analysis algorithms with a software program, with the goal of providing it to their medical collaborators.   Then they started the company and converted the research programme into a business.   They built Google Maps for the brain by using advanced MRI technology capable of capturing microstructural properties of the brain tissue and to provide detailed 3D maps of the brain.   The programme would then evaluate the structural condition of the nerve fibers affected by a given neurodegenerative disease (multiple sclerosis, Parkinson's, Alzheimer's, among others).   It was then provided as the brain imaging analysis platform on the cloud.

63.   Dr Rodrigues added that neurodegenerative diseases were still diagnosed according to clinical scales, based on behavioral problems and the inner anguish they cause.   Human brain imaging research showed that these conditions were multifaceted, with different symptoms that could be traced to different networks of brain regions.   In future, more could be done from current images and current equipment by collecting and integrating the different information, the different brain data.

Observations

64.   The delegation has the following observations:

(a) With the co-operations of the Government, the industry and youngsters, the "Dual System Vocational Training (DSVT)" is an effective training programme to equip youngsters with trade knowledge and skills as the provision of suitable skilled workers for the industry.

(b) CeBIT 2014 has successfully transformed into an international business-only exhibition for the digital industry.   Various business solutions, business models and applications employing latest technologies, especially those

related to the featured themes of big data, data security and cloud computing, have been revealed.

(c) The theme of CeBIT "Datability" has addressed the issue of big data, a sweeping trend in the IT industry, and showed the capability to use and manage huge volume of data responsibly would transform many business models and production processes.

(d) Various applications and business solutions have been showed or demonstrated on smart city and smart home, with the concepts of eco-system and green electronics together with focuses on energy saving and controls of facilities anywhere and anytime via mobile communication networks.

(e) The Industry 4.0, it has been identified as the 4th industry revolution.   Through connecting machines, work pieces and systems, intelligent networks along the entire value chain will be created that can control each other autonomously.

(f) By the support of a large company group and through the international competition of the CODE_n Award, CeBIT 2014 has provided an excellent platform for 50 startups to demonstrate their talent in setting up new business and they would be the new industrial blood for their country.   On the other hand, the industry needs venture capitals, investors and support of the Government to provide the young entrepreneurs the opportunities to convert their creative ideas and research projects into business.

(g) CeBIT 2014 has provided a Job & Career Hall for in-service personnel of the industry to seek about 5400 jobs offered by the exhibitors, which was a good place for job matching.

(h) The students from over the country, including the youngsters receiving DSVT programme, were encouraged and guided to tour CeBIT 2014 to keep abreast of the latest technological development of the industry.   The "Tec2You"

display at Hall 11 was specially designed for students and youngsters to familiar with the training opportunity and career development in the industry.

(i) The engineers in German have a recognized and respectful status in the society, which may cause German in a leading engineering position in the world.

Conclusions and Recommendations

65.　　From the observations of the delegation visit and with reference to present situation of the electronics industry in Hong Kong, the delegation has the following recommendations:

(a) Electronics companies in Hong Kong are recommended to take DSVT as a reference and co-operating with VTC and other training providers to train youngsters to be skilled workers for the industry.　The companies have to provide experienced staff as mentors of the trainees.　Also, the Government needs to promote the importance of such training to parents, students and the public to arose their interest and participation in the training.

(b) Electronics companies are also recommended to

　　i.　diversify their business in the applications focused on business users and solutions to business aspects;
　　ii.　notice the development of Industry 4.0 for coming manufacturing processing; and
　　iii.　visit future CeBIT to experience the latest development in the industry

(c) Trade Development Council and trade associations are recommended to work together to establish the followings in future exhibitions:

　　i.　A job and career hall for exhibitors to give career talks

and recruit professionals at the shows;

ii.   Startup booths for youngsters to set up their business; and

iii.   Links with students and to invite them to attend the shows for them to familiarize the industry.

(d) The Department of Electronics & Information Engineering and Pro-Act Training and Development Centre (Electronics) are recommended to include all the latest technology development of the trends of CeBIT 2014 in their respective courses.

66.   The delegation considers that the visit has been worthwhile and fruitful.   It is recommended that similar visits should be made in future to keep the Training Board abreast of the latest developments in the electronics industry.

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Vocational Training Council
Electronics and Telecommunications Training Board
Itinerary for the 2013/14 Delegation Visit to Germany
(10 – 16 March 2014)

Date	Event
10 March 2014 (Monday)	**Depart for Hannover, Germany via Zurich, Switzerland from Hong Kong (at about 00:00 AM)**
10 March 2014 (Monday)	**Arrive Hannover, Germany (at about 09:00 AM)** Visit CeBIT 2014 in **Messegelände,** Hannover (PM) Attend " **UK- Germany Technology Summit"** at Hall 8 – Central Stage from 3:30 to 5:00 PM
11 March 2014 (Tuesday)	Visit **Industrie- und Handelskammer Hannover** (for Industrial education & training) (9:00 to 11:00 AM) Besucheranschrift: Schiffgraben 49, 30175 Hannover (Tel: 0511 3107-248) Visit CeBIT 2014 in **Messegelände,** Hannover (PM)
12 March 2014 (Wednesday)	Meet **Board of Management of Deutsche Messe AG** and visit **13 companies** at CeBIT 2014 in **Messegelände,** Hannover (9:30 AM to 5:30 PM)

Date	Event
13 March 2014 (Thursday)	Visit **3 companies** at CODE_n of CeBIT 2014 in **Messegelände**, Hannover (AM & PM)
14 March 2014 (Friday)	Visit **more companies** at CeBIT 2014 in **Messegelände**, Hannover (AM & PM)
15 March 2014 (Saturday)	**Depart for Hong Kong from Hannover, Germany via Zurich, Switzerland (at 7:50 PM)**
16 March 2014 (Sunday)	**Arrive Hong Kong (at 5:25 PM)**