SME Development Fund (SDF)/
Dedicated Fund on Branding, Upgrading and Domestic Sales (BUD Fund)
(Organisation Support Programme) (OSP)

Final Report on Approved Project

Project ref. no.   : BUD15 3 002

Project title   : Hong Kong Automation Industry – Promote the branding of "Hong Kong Automation" and assisting industry players to explore the industrial automation market in China'

香港自動化行業—在內地推廣「香港自動化」品牌及協助業界拓展工業自動化市場

Period covered   : From   01/05/2016   to   30/04/2018
                                   (dd/mm/yy)   (dd/mm/yy)

1. Project Details

(Please mark with "*" if any of the following project details is different from that in the project proposal appended to the project agreement.)

Project Summary (in about 150 words)

Industrial Automation is defined as the use of control systems and software to independently operate and monitor a mechanized system of industrial processes. There are distinct forms of automation including factory automation and process automation. Classifications of the automation industry are listed at Annex.

Hong Kong automation industry players have developed its business for over 30 years, however, there is no platform for them to build its image or networking in the past. In recent years, there is room for the automation industry to create a platform as the Government focus more on advanced technology industry. Approved by the Legislative Council in April 2015, the Federation of Hong Kong Industries established first automation trade council to strengthen the image of Hong Kong automation industry as "one-stop tailor-made solution for automation" and line up all the Hong Kong automation enterprises in the market.

Hong Kong automation industry players can be simply divided into three categories: equipment & tailor-made services, components, and system integration. Key markets are Europe, Southeast Asia and China. According to unofficial information collected from some Hong Kong automation companies, 70% of their business is from export (to Europe, Southeast Asia), 30% is from Mainland domestic sales. Hong Kong automation industry has striven for its strength in advance technologies and one-stop tailor-made services in automation, especially in watch & clock, food, electronics, toy, metal, mould & die, automotive, plastic industries. Some leading Hong Kong automation companies are Pro-technic Machinery Ltd. (equipment & tail-made services. 50% of its machinery is made by Pro-technic), Leeport & Co. (equipment & tail-made services), OMRON Ind. Automation (China) Co. Ltd. (Component), Rockwell Automation (system integration), Karmo (Apollo) Group Limited (system integration) etc.

Since labour shortage and rising wages became a fact of life in the PRD region, many enterprises are looking to introduce automated production technology as a way to reduce their reliance on manual workers and cut costs. With the rising attention on Industry 4.0, many overseas brands and consumers require OEM manufacturers to meet certain automation requirements. Industrial automation observably is one of the solutions to enhance production efficiency and quality. Meanwhile, China is promoting the "Made in China 2025", a Chinese version of the Industry 4.0 and the Belt and Road Initiatives. A research report by HSBC indicated that China's current industrial robots to workers ratio is 30 per 10,000. Compared with the global average is 62, there is a huge market opportunity of automation industry in China. Many manufactures in the Mainland start looking for automation solution, however, the image of "Hong Kong Automation" is not vivid, there is lack of platform for Hong Kong automation players to promote and build network in China. Although few industry players are doing well in China, for example, Pro-technic Machinery Ltd. entered China market in 1987, they are one of the best automation service providers in the Mainland. Googol Technology (HK) Ltd., located in entrepreneur centre of Hong Kong University of Science & Technology, is specializing in R&D, production, marketing and support of motion controllers and controller base system. Googol developed its brand "Googoltech" on innovative products and technology in industry automation control field. But for the Hong Kong automation SMEs, it is hard for them to enter this huge market alone under the weak branding and marketing of "Hong Kong Automation". Also, they face lots of challenges in developing the Mainland market, such as regulation

and standard for intelligent manufacturing in China, safety & security of automation control system, specific techniques and systems to serve all segments of manufacturing industry, users' preferences and trends in specific industries etc.

This project aims to build the image of "Hong Kong Automation Industry", enhance industry knowledge and technology in tapping into the Mainland market, and create business opportunities and networking platform with various industries in the Mainland, such as watch & clock, food, electronics, toy, metal, mould & die, automotive, and plastics etc. Target audience of this project is not limited to automation players, enterprises from different industries which consider transforming and upgrading through automation can benefit.

In this project, a series of activities including setting Hong Kong Pavilion at Mainland exhibition, large scale automation forum and mission will be organised. A publicity campaign will be rolled out to strengthen the image of Hong Kong automation industry. E-newsletter and web page will set as an effective communication e-platform to share the latest automation technology and information among the industry players.

Project Objective(s) (in about 80 words)
To build the image of Hong Kong Automation as one-stop tailor-made solution of automation and strength of Hong Kong automation industries in China To assist Hong Kong industry players to upgrade and advance their technology in order to compete in the Mainland market
To strengthen the competitiveness of Hong Kong automation industries
To assist Hong Kong automation industry players in exploring the business opportunities in the Mainland market

Grantee/Collaborating Organisation/Implementation Agent

Grantee	:	Federation of Hong Kong Industries (FHKI)
		Hong Kong Automation Technology Council (HKATC)
		Hong Kong Trade Development Council (HKTDC)
		Hong Kong Productivity Council (HKPC)
		Hong Kong Science and Technology Parks Corporation (HKSTP)
		Hong Kong Watch Manufacturers Association Limited (HKWMA)
		The Toys Manufacturers' Association of Hong Kong Limited (TMHK)
		Hong Kong Plastic Manufacturers Association Limited (HKPMA)
Collaborating Organisation(s)	:	The Hong Kong Electronic Industries Association Limited (HKEIA)
Implementation Agent(s)	:	Nil

Key Personnel

		Name	Company/Organisation	Tel No. & Fax No.
Project Co-ordinator	:	Ms Alexandra Poon	Federation of Hong Kong Industries	Tel: 2732 3173 Fax: 2721 3494
Deputy Project Co-ordinator	:	Ms Summer Cheung	Federation of Hong Kong Industries	Tel: 2732 3150 Fax: 2721 3494

Project Period

	Commencement Date (day/month/year)	Completion Date (day/month/year)	Project Duration (No. of months)
As stated in project agreement	1/5/2016	30/4/2018	24
Revised (if applicable)			

2. Summary of Project Results

Project Deliverables
(Please list out the project deliverables as stated in the project proposal appended to the project agreement and provide details related to the actual result achieved for each of them.)

	Project deliverable	Quantifiable target number (e.g. 100 participants)	Actual result achieved (e.g. 90 participants)	Reasons for not achieving the target, if applicable (e.g. The total number of registered participants was over 120. However, some of them did not show up eventually. Will strengthen promotion and try to make up for the shortfall in the following two seminars.)
a)	5-day mission to the Mainland - Shanghai and Suzhou (30 August - 3 September 2016)	25 participants	25 participants	N/A
b)	Roundtable meeting and business networking session during the mission	15 representatives of industrial associations & potential buyers	13 representatives of industrial associations & potential buyers	2 representatives could not attend the business networking event in Suzhou due to urgent business engagements.
c)	International Industrial Automation Technology Forum (14 – 15 March 2017)	Plenary session: 300 participants Concurrent sessions: 480 participants	Plenary session: 282 participants Concurrent sessions: 450 participants	The registration number was far higher than the target number, but the no show rate was unexpectedly high.
d)	Hong Kong Pavilion at Industrial Automation Shenzhen (28 – 30 June 2017)	60 guests for opening ceremony	80 guest attended the opening ceremony	N/A
e)	Pavilion Booklet	2,000 copies	2,000 copies	N/A
f)	Project websites	1 Webpage	1 Webpage	N/A
g)	e-newsletters	7 Issues	7 Issues	N/A

Details of the deliverables (e.g. date, duration, venue, speaker, topic discussed, etc.)
(Please list out in table format if necessary.)

(a) <u>5-day mission to the Mainland</u>
Date: 30 August - 3 September 2016 (5 days)
Location: Shanghai and Suzhou

Total 25 participants from Hong Kong automation companies participated the mission. Delegates visited eight factories to learn from their automation technologies, facilities and systems, as well as to know more about the demand for industrial automation in different sectors. Please find the visited factories as below:

	Date of visit	Factory	Location	Product Type
1	30 August	ABB Engineering (Shanghai) Limited	Shanghai	Robots
2	31 August	SAIC Volkswagen Automotive Company Limited	Shanghai	Automobile
3	31 August	OMRON (Shanghai) Company Limited	Shanghai	Automation solution
4	1 September	Kingdom Precision Product (Suzhou) Company Limited	Suzhou	Metal
5	1 September	Kawasaki Precision Machinery (Suzhou) Limited	Suzhou	Robots
6	2 September	Mitsubishi Electric Automation Manufacturing (Changshu) Company Limited	Suzhou	Electronics
7	2 September	Suzhou Iron Technology Company Limited	Suzhou	Medical
8	3 September	Shanghai Machine Tooling System	Shanghai	Automation machinery

In addition to factory visits, delegates had fruitful exchange with representatives of industrial associations, potential buyers, officials to learn more the automation market in Shanghai and Suzhou. The Shanghai-Hong Kong Roundtable Meeting on Automation Industry and Suzhou-Hong Kong Exchange Session were held in Shanghai and Suzhou on 30 August 2016 and 1 September 2016 respectively. Below please find the attendance list of industrial associations and potential buyers in Shanghai and Suzhou.

Representative	Association / Company
盛逸山處長	蘇州市商務局
宋耀平部長	
包增琳教授	寶信軟體
李少遠教授	上海市自動化學會
陳　堅先生	
石明根先生	
黃健民教授	上海電氣集團
張玉龍教授	上海電氣自動化設計研究所有限公司
程武山教授	上海工程技術大學資訊學院
楊慧斌教授	上海工程技術大學
王景成教授	上海交通大學
張瑜燕女士	上海對外科學技術交流中心
黃麗嫻女士	香港貿發局上海代表

Also, the visit highlights were posted on project webpage (https://bud.hkatc.org.hk/zh-hant/event/detail/4/) for public access.

(b)   2-day International Industrial Automation Technology Forum
Date: 14 – 15 March 2017 (2 days)
Venue: Hong Kong Convention and Exhibition Centre

The forum was divided into 2 sessions: plenary session and concurrent session. A half day plenary session was held on day 1 (14 March   ) and 4 experts were invited to be speakers to share the information and status of "Hong Kong Automation Industry". Invited speakers and rundown were listed as below:

Timeslot	Session	Organisation	Name of Speaker	Presentation Topic
9:00am	Registration			
9:30am	Welcoming Speech	Federation of Hong Kong Industries	Prof Daniel M Cheng,	N/A
9:35am	Opening Remarks	Hong Kong Automation Technology Council	Robert Lai	N/A
9:40am	Opening Speech by Guest-of-Honour	Innovation and Technology Bureau, HKSAR	Dr David Chung	N/A
10:00am	Keynote Presentation (1)	Ministry of Industry and Information Technology of the People's Republic of China	Ye Meng	The Standard System of Intelligent Manufacturing
10:30am	Keynote Presentation (2)	Siemens AG	Sun Feng, Erik	Siemens Drives the Digital Enterprise
11:00an	Networking Break			
11:20am	Keynote Presentation (3)	Emerging Technologies Institute, The University of Hong Kong	Prof Xi Ning	Industrial Automation in Information Era
11:50am	Keynote Presentation (4)	Mitsubishi Electric Automation (China) Ltd.	Dr Masaki Ryu	Future Trend of Manufacturing Intelligent Manufacturing Solution e-F@ctory

12:20nn	Q&A Session			
12:45nn	Networking Luncheon for speakers			

For the concurrent session, there were 8 seminars (2 held in the afternoon on 14 March 2017, and 6 on 15 March 2017) covering the application of automation in different industries, included mould & die, clock & watch and jewellery, toys, food & beverage, electronics, metal, plastics and automotive. Total 21 speakers were invited to share the latest automation applications on specific industries, users' needs and requirements in specific industries and case studies of best practices in the Mainland from users' angle. Invited speakers and rundown were listed as below:

14 March 2017 (half day)

Timeslot	Industry	Organisation	Name of Speaker	Presentation Topic
14:00pm	Registration			
14:30pm	Mould & Die	Ace Corporation Holdings Ltd.	Dr Jack Yeung	Innovative Automation – the Hong Kong Way
		EOS Electro Optical Systems (Shanghai) Co., Ltd	Adley Wu	EOS Metal 3D Printing on Tooling Industrial Application
		ARBURG Machine and Trading (Shenzhen) Co., Ltd.	Ray Zhao	Industry 4.0 for Mould & Die
	Clock & Watch and Jewellery	Chow Tai Fook Jewellery Group Ltd.	Liu Chun Wai, Bobby	Smart+
		Kam Yuen (Group) International Ltd.	Dr Ko Chung Nin	Technology Roadmap to Automation of Kam Yuen
		BPS Global Group	Dr Wong Yiu Man	Automatic Storage and Retrieval Solutions for Time Pieces and Jewellery Industry
16:15pm	Q&A Session			

15 March 2017 (full day)

Timeslot	Industry	Organisation	Name of Speaker	Presentation Topic
9:45am	Registration			
10:00am	Toys	Stratasys Ltd.	Jay Baversdrof	Transforming Toy Design and Manufacturing with the Latest 3D Printing Technology
		Hunan Cothink Robotics Tech. Co., Ltd.	Allen Liang	Create Future with Smart Collaborative Robot
	Food & Beverages	Lee Kum Kee International Holdings Ltd.	Ricky Ng	Lee Kum Kee Soy Sauce Manufacturing System Automation – Application & Sharing
		Cathay Pacific Catering Services	Jenny Lam	Automate to Win
		Staubli (HK) Ltd. Taiwan Branch	Jack Chen	Automation for in-flight Catering
11:45am – 12:00nn	Q&A Session			
13:45pm	Registration			
14:00pm	Electronics	Fuji Machinery Manufacturing Co., Ltd.	Dr Ye Jian Ming	Industrial Automation Technology in Fuji
		The Hong Kong Institution of Engineers	Ir Calvin Tang	Control, Automation & Instrumentation for Industry 4.0
		Yaskawa Electric (China) Co., Ltd.	Toshiaki Nagai	Industrial Robotics Applications of Yaskawa
	Metal	Kingdom Fine Metal Ltd. & Kingdom Technology (Shenzhen) Co., Ltd.	Alan Suen	Industry 4.0

		ABB Robotics (Zhuhai) Ltd.	Lv Jian Jerry	Robot & Application in Metal Industry
15:45pm	Q&A Session			
16:00pm	Plastics	China Plastics machinery Industry Association	Zhu Kangjian	Industry 4.0 – Intelligent Solution of Injection Molding Factory
		Cosmos Machinery Enterprises Ltd.	Tsang Tsz Kin, Ken	Industry 4.0 Starts the Technical Innovation Fashion in Plastics Industry
		The Hong Kong University of Science and Technology	Prof Furong Gao	Toward Industry 4.0 for Injection Molding
	Automotive	GOM GmbH	Freddy Yih-An Nee	3D Automated Inspection in Industry 4.0
		Kawasaki Robotics (Tianjin) Co., Ltd.	Isobe Tadashi	The Development of Kawasaki Robotics in Automation Industry
17:45pm	Q&A Session			

Dr David Chung, JP, Under Secretary for Innovation and Technology was the Guest-of-Honour of the Forum and shared the support from the Government in R&D and technology development. 311 participants attended the 2-day forum. Business networking sessions were arranged during the forum to facilities business opportunities.

Publicity campaign was launched for the forum through different channels, including advertisement banner at FHKI & project website, eDM, invitations, flyers, advertising on Mainland industrial publications, etc. Programme booklets were produced and distributed onsite.

The forum was recorded and the presentation videos of speakers were included on the 3rd e-newsletter and uploaded to project webpage (https://bud.hkatc.org.hk/en/newsletter/detail/6/) for public access.

(c) Hong Kong Pavilion at Industrial Automation Shenzhen
Date: 28 – 30 June 2017
Venue: Hall 2 of Shenzhen Convention & Exhibition Center

A 435-sqm Hong Kong Pavilion was set up at Industrial Automation Shenzhen to help Hong Kong automation industry players to showcase their capabilities and tap into domestic sales opportunities. 12 automation applications were selected by project committee, they were assigned into 3 production lines to showcase different industry applications at the display gallery. Please find the details as below:

	Exhibit name
1	Automation Production Line - Pen
2	Intelligent Autoamatic Warehouse
3	速繪機器人、智能自主規劃系統、智能裝配機器人系統、高速傳輸機器人系統
4	雲平臺精密五軸加工機及機器人自動上下料展示
5	自動鎖螺絲機
6	建築施工現場焊接機器人
7	Robot Assisted Polosher with Constant Force Control
8	"輕。管理"智能車間管理系統
9	機器人四軸驅控一體及視覺應用、焊接機器人控制系統
10	Canned Plant Manufacturing System
11	Cable-driven Robot for Architectural Design
12	Rethink Robotics機器人 - Sawyer

The Opening ceremony of Hong Kong Pavilion was held on 28 June 2017 at 10:30-13:30 and Alfred Tang, Director of Shenzhen Liaison Unit of HKSAR, was cordially invited to be the Guest-of-Honour of the Opening Ceremony in support of the Hong Kong Government's contribution to the field of R&D and technology development in automation. Around 80 guests attended the opening ceremony.

5 guided tours were arranged during the 3-day exhibition. 2,000 copies of booklet were produced to introduce the background and strength of Hong Kong automation industry, displayed exhibits and exhibitor list of Hong Kong Pavilion.

Publicity campaign was launched for the Hong Kong Pavilion through different channels, including FHKI & project website, onsite advertisements at exhibition venue, online and printed advertisements by exhibition organiser, advertising on Mainland industrial publications, WeChat, press release, etc.

The highlight of Hong Kong Pavilion was published on the 4th e-newsletter and uploaded to project webpage (https://bud.hkatc.org.hk/en/newsletter/detail/7/) for public access.

b) Publicity:
    (1) Publicity campaign featuring advertising and interview has been carried out to draw industry players' attention on Hong Kong automation industry and promote the project and project events. Please find the advertisement details as below:

        (i) Industrial publications:
            - Total 15 full pages advertisements were made at FHKI's monthly journal. 6 interviews were conducted to highlight the advantages and applications of automation.

	(https://www.industryhk.org/HKI/201710/26/ P.26-27)
Interview with automation company (5)	November 2017 issue (https://www.industryhk.org/HKI/201711/48/ P.48-49)
Interview with automation company (6)	December 2017 issue (https://www.industryhk.org/HKI/201712/26/ P.26-27)

- 1 DPS advertisement was made at HKMDC annual publication on November to promote the project deliverables. (http://hkmdc.org.hk/attachment/publication/pdf/1479720727Alix6.pdf slide39, P.72-73)

- 1 full pages advertisement was also made at HKTC & TMHK annual publication on December 2016 to promote the deliverables.

- Advertisement in Mainland trade magazines - 自動化博覽 (2 issues), 自動化應用 (11 issues) and 電工技術 (6 issues) were conducted.

(ii) Online advertisements:
- Banner advertisements on FHKI's website were arranged for 22 months (May 2016 – January 2018) (https://www.industryhk.org/en/index.php?undefined).
- Online promotions were carried in 中控網 to promote Hong Kong automation industry and its strength.

c) Publication of web page and e-newsletters for technology and information sharing

(i) Project website:
Project website was launched on 11 November 2016. The domain name of the project website is https://bud.hkatc.org.hk, which is launched under FHKI official website.

(ii) E-newsletter:
7 issues of e-newsletters were published and disseminated to industry players (https://bud.hkatc.org.hk/zh-hant/newsletter/).

Issue of e-newsletter	Date of publication
First issue	October 2016
Second issue	February 2017
Third issue	May 2017
Fourth issue	August 2017
Fifth issue	December 2017
Sixth issue	February 2018
Seventh issue	April 2018

Milestones (in chronological order)

(# Please indicate if the milestone is completed (C), deferred (D) or not achieved (N). If it is deferred, please indicate the revised completion date. For those milestones which are deferred or not achieved, please also provide the reasons under item 2.4.)

Milestone (as set out in the approved project proposal appended to the project agreement)	Original target completion date	Revised completion date (if applicable)	Status (C/D/N) #
(a) Formation of advisory committee and working team	31/5/2016		C
(b) Formulate detail implementation plan and logistics arrangement of mission, forum	15/6/ 2016		C
(c) Conduct interviews and roll out publicity campaign in Hong Kong and the Mainland	30/4/2018		C
(d) Plan and design the template of quarterly e-newsletters	31/7/2016		C
(e) Plan and conduct the 5-day mission to the Mainland	31/8/2016		C
(f) Launch of project webpage	31/8/2016	11/11/2016	D
(g) Launch of the 1st issue of quarterly e-newsletter	30/9/2016	31/10/2016	D
(h) Launch of the 2nd issue of quarterly e-newsletter	31/12/2016	17/2/2017	D
(i) Conduct the 2-day International Automation Forum	31/3/2017		C
(j) Launch of the 3rd issue of quarterly e-newsletter	31/3/2017	31/5/2017	D
(k) Launch of the 4th issue of quarterly e-newsletter	30/6/2017	22/8/2017	D
(l) Set up a Hong Kong pavilion at "Industrial Automation Shenzhen"	31/7/2017		C
(m) Launch of the 5th issue of quarterly e-newsletter	30/9/2017	7/12/2017	D
(n) Launch of the 6th issue of quarterly e-newsletter	31/12/2017	26/2/2018	D
(o) Launch of the 7th issue of quarterly e-newsletter	31/3/2018	27/4/2018	D

Future Plan for Promoting the Project Deliverables (Nil if not applicable)
Nil