

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

Final Report on Approved Project

This report is for (please put "✓" in either one box only):

☒ SDF Final Report

☐ BUD Fund (OSP) Final Report

Project ref. no.	:	<u>D17 003 008</u>	
Project title	:	<u>Development of the "Eyewear Engineering Design Guidebook for Better-fit" to enhance the quality and competitiveness of Hong Kong eyewear manufacturing industry</u>	
Period covered	:	From <u>01/03/2018</u> (dd/mm/yy)	to <u>29/02/2020</u> (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)

The project is to enhance the quality and competitiveness of Hong Kong eyewear manufacturing industry", by promoting and demonstrating "Better-Fit" design to the industry. A 3D digital Asian headform database will be built, along with the development of the "Eyewear Engineering Design Guidebook for Better-Fit". This is to demonstrate the use of headform features, and the technique to combine ergonomics, engineering and aesthetics for the design and development of Asian "Better-Fit" eyewear. Apart from the digital database, a new set of physical headform models will also be fabricated, based on the data acquired in the project. With an aim to provide further guidance on "Better-Fit" design, 3 workshops will be launched. The project deliverables and conclusion will also be uploaded to the Applicant's website.

Project Objective(s) (in about 80 words)

1. To build the 3D digital headform database for eyewear industry for Asian population

2. To develop the "Eyewear Engineering Design Guidebook for Better-fit"

Grantee/Collaborating Organisation/Implementation Agent

Grantee : Hong Kong Optical Manufacturers Association Limited (HKOMA)
Hong Kong Eyewear Designer Club
Federation of Hong Kong Industries Group 28 Spectacles and optical

Collaborating Organisation(s) : products

Implementation Agent(s) : Hong Kong Productivity Council

Key Personnel

	<u>Name</u>	<u>Company/Organisation</u>	<u>Tel No. & Fax No.</u>
Project Co-ordinator	Nathan Wong	Hong Kong Optical Manufacturers Association Limited	35635041 N.A.
Deputy Project Co-ordinator	Linda Poon	Hong Kong Optical Manufacturers Association Limited	23326505 27705786

Project Period

	<u>Commencement Date</u> (day/month/year)	<u>Completion Date</u> (day/month/year)	<u>Project Duration</u> (No. of months)
As stated in project agreement	01/03/2018	29/02/2020	24
Revised (if applicable)	NA	NA	NA

2. Summary of Project Results

Project Deliverables

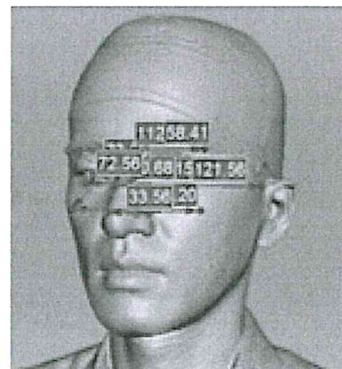
(Please list out the project deliverables as stated in the project proposal appended to the project agreement and provide details related to the actual result achieved for each of them.)

	Project deliverable	Quantifiable target number (e.g. 100 participants)	Actual result achieved (e.g. 90 participants)	Reasons for not achieving the target, if applicable
a)	3D digital headform database and headform models	4000 headform data, 8 digital models and 16 physical models A booth at the Hong Kong Optical Fair 2018 (48 sqm)	4374 headform data collected, 8 digital and 16 physical models are produced A booth (48 sqm) was set up at the Hong Kong Optical Fair 2018	N.A.
b)	Eyewear Engineering Design Guidebook for "Better-fit"	400 hardcopies and e-version on HKOMA website	400 hardcopies delivered and e-version on HKOMA website	N.A.
c)	"Better-fit" eyewear engineering design workshops	3 workshops, 40 participants each	3 workshops conducted, total 173 participants	N.A.
d)	Promotion	2000 pamphlet copies at HKOF 2018, 2000 pamphlet copies at workshop, 4 full page advertisement of project achievement in HKOMA yearbook (1000 copies)	2,000 project pamphlet copies delivered at HKOF 2018 2,000 workshop pamphlet copies delivered through the network of HKPC, applicant and collaborating organizations to Hong Kong eyewear manufacturers. 6 full pages advertisement of project achievement in HKOMA yearbook (2000 copies)	N.A.

Details of the deliverables (e.g. date, duration, venue, speaker, topic discussed, etc.)

(Please list out in table format if necessary.)

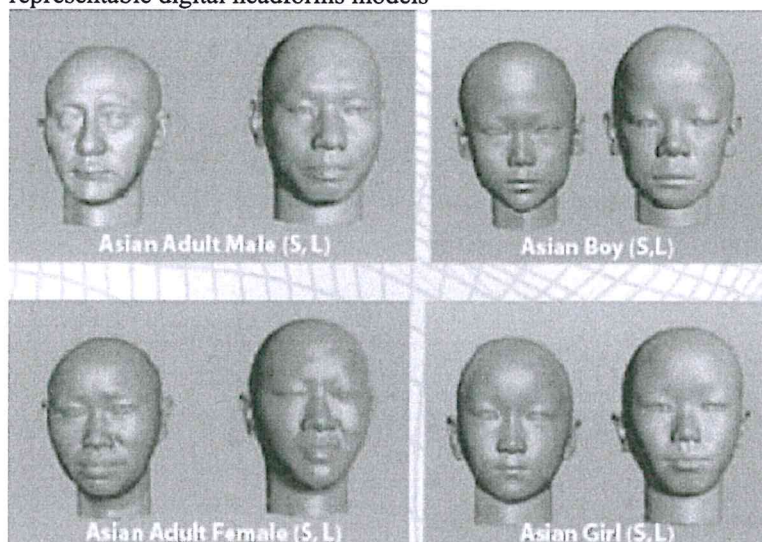
- 3D digital headform database and headform model
 - 4374 headform data (1940 adult and 2434 kids) has been collected from Optical Fair 2018, eyewear manufacturers factories and Hong Kong eyes hospital.
 - The headform features related to eyewear design are under post processing and analysis according to the different groups of Asian population to build the headform database.



- The project and project deliverables has been promoted in the Optical Fair 2018 to the Hong Kong eyewear manufacturers about the project objective and progress.
- The buyers who are interested in the 'better-fit' eyewear has also been aware of the continuous development of Hong Kong eyewear industry.
- The 3 days optical fair has attracted 810 exhibitors and 16840 buyers and about 5000 visitors has visited the booth.



- The headform features of headform samples in each group were further analyzed and developed 8 representable digital headforms models



- The database can be accessible at the applicant's website.

登入香港眼鏡業頭型數據庫

https://www.hkoptical.org.hk/betterfit_intro-tc.html

hkpc[®]

Hong Kong
Optical Manufacturers Association
HOME | CONTACT US
| 家 | 簡 | ENG

關於本會
會員名錄
會員資訊
香港眼鏡設計

"Better-fit"眼鏡設計頭型數據庫

用戶編號	
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<input type="button" value="提交"/>	



- 16 physical headform models (2 for each digital headform model) were made for the showcase of betterment of 'better-fit' eyewear at the Hong Kong Optical Fair 2019.



- Eyewear Engineering Design Guidebook for “Better-fit”
 - The Eyewear Engineering Design Guidebook for “Book-fit” is published.
 - 400 copies has been printed and distributed to the HK optical industry practitioners by the Applicant.
 - The softcopy of the guidebook is uploaded to the Applicant’s website for free download.
- Link: https://www.hkoptical.org.hk/betterfit_intro.html



- “Better-fit” eyewear engineering design workshops
 - The workshop duration is 3 hours and cover the practical usage of the eyewear engineering design guidebook and the 3D technologies for scanning and printing for ‘better-fit’ customization.
 - The course is opened fir online entollment in the applicant’s website and three workshops has been conducted on Jul 2, 9 Aug 12 and Sept 02 in Year 2019 with 74, 41 and 58 participants.



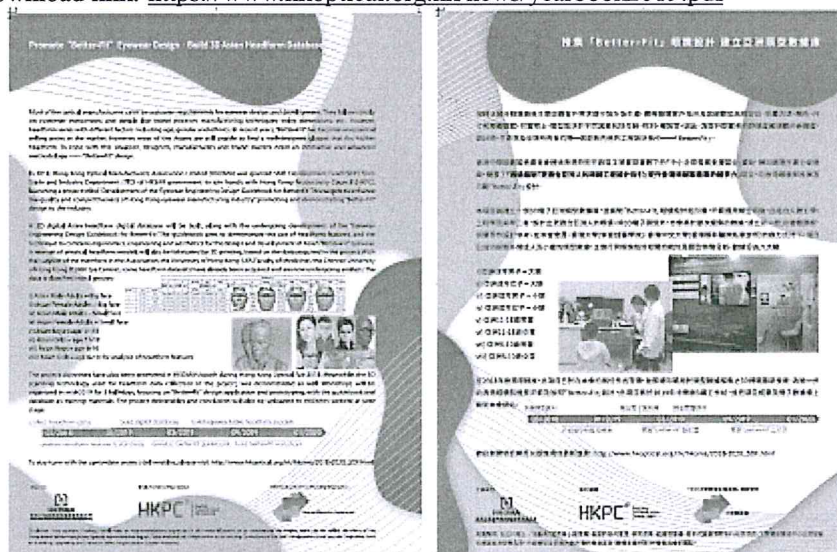


- **Promotion**

- A pamphlet (2000 copies) on 3D headform database, headform models and “better-fit” guidebook has been produced and distributed at the Optical Fair 2018, through the networks of HKPC, Applicant and collaborating organizations to Hong Kong eyewear manufacturers. Softcopy has been uploaded to the applicant’s website (https://www.hkoptical.org.hk/betterfit_intro.html)
- A promotional pamphlets (2000 copies) on “better-fit” workshops has been produced and distributed through the network of HKPC, applicant and collaborating organizations to Hong Kong eyewear manufacturers. Softcopy is uploaded to the applicant’s website.

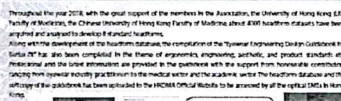


- Advertisement (2 full pages) about the project progress printed at the applicant’s Year 2019 yearbook. Download link: <https://www.hkoptical.org.hk/news/yearbook2019.pdf>



- Advertisement (4 pages) about the project achievements printed at the applicant’s Year 2020 yearbook. Download link: <https://www.hkoptical.org.hk/news/yearbook2020.pdf>

With the conclusion of the final "Sustent III" aerospace engineering design workshop on the 24th of September 2018, marks the closing of the "Development of Aerospace Engineering Design Guidelines for Airbus A350 Project, Batch 1" 2018; the project was jointly headed by the Hong Kong Aircraft Manufacturing Association (HKMA) and Hong Kong Productivity Council (HKPC), with the goal of developing a 3D Headform Database and an engineering design handbook to assist industry practitioners with market intelligence and latest technologies, opening the industry to the opportunity of re-industrialisation and innovation.



To help industry practitioners applying "better fit" overseas design methodologies, these "better fit" overseas design workshops have been held to provide hands-on training in various fit overseas design and engineering. The workshop encourages the following development strategies: application of innovative manufacturing techniques in the optical manufacturing industry and standards on the safety and initial testing for scientific products.



據寶得第三屆的 Better Fit 頒獎典禮工作小組在 10 月 9 日宣佈稱，最佳寶得(Better Fit)新員工培訓計劃對於新晉的第一個主管經理已經完成。項目計劃於 2018 年，在香港中國國際貿易發展委員會香港全力發展暨在港商務政策的中、小企業發展委員會等機構資助下實施。目的為為香港新晉經理提供有關第一套針對性的 3D 學習和發展新員工培訓計劃，以協助設計和為客戶訂制切合亞洲人際關係的課程，也有助香港企業建立本土品牌，為國際市場創設及員工優化發展。

collect training data	build initial database	build representative benchmark models
01/2018	01/2019	03/2019
09/2019	01/2020	

open3000 benchmarks features & datasets develop better 3D generation better 3D embeddings

在 2018 年雙、在香港大學本職副學科、香港中文大學副學科、浙江政經財政系、浙江大學副學科和副學科(光學)等各方的鼎力支持下,該校對辦的改革及分析工作順利完成,亦成功發展出「類型化」人事管理型。

「這門科以設計開發全副制服為導向，包括為一個專業及受認可的專業人士與力及下列「你」司合意了「Better-Fit」和職工。課程設計包括：針對以人機工程、工程、建築學及設計為導向，為香港商界提供專業知識和最新的資訊，選取新技術以及電子學的「Better-Fit」和職工課程設計均已在國際商業中國服裝貿易展會的官方網頁，方便香港服裝業中小企業查詢與洽商。



為了進一步提升網頁「Letter-Fit」的閱讀設計概念，香港中國國際貿易發展局曾成立第一間進行了三年工作的「信諾」和誠信發展計劃，旨在對本地和國際海關的應用，以及對產品安全及為貿易提供標準實現，為國際貿易發展提供一貫的「Letter-Fit」閱讀設計及應用製作的建議。



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01 Impending the coverage of "Better fit" dataset

02 To include more company/industry development opportunities

The accounting is effective, but it can be further improved by providing more information such as the information transparency, including collaboration with material parties, and some studies or plan releases.

03 The workshop can be improved

Building on the success of the MotionEye™ program, many ways are opened to further control and improve the tool. In addition, the use of the new Xing Optical Measurement System, Inc. features, with a standard configuration for handling headforms data established, enables studies on the ergonomics characteristics of other cars and other related product categories can be conducted with a more standardized and cost-effective method. Another possible direction is in utilizing the 3D standard headform model database to achieve a more efficient prototyping process through the use of 3D and computer aided design technology. Certainly, headform models and eyewear models may be further studied and developed to include more important characteristics of a real head such that prototype fitting results are as accurate as fitting on a real car.







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曾獲得三項的「Better Fit」品牌設計工作於在今年月份開始，繼而曾Better Fit 和獨立設計師針對計劃的第一個里程碑已經完成。這項計劃於 2008 年，由香港中國國際貿易委員會與香港主權移交後在香港政府的支持下，由香港貿易發展局資助下完成，以協助香港企業與海外貿易。其計劃針對的 30 個國際貿易和製造工程師設計所，以協助其發展為客戶打造適合亞洲人需要的服裝，亦有助香港企業建立本土品牌，為華商實現創造就業及工廠化的目標。

select headlamp data build right database build assessment to headlamp model

01/2018 01/2019 03/2019 04/2019 01/2020

create headlamp feature & database develop better fit algorithm better fit workspace

在 2018 年雙、台關係大學國際化發展研討會、香港中文大學發展研討會、浙江新農學院、暨南大學和華南師範大學等各地的鼎力支持下，國際校務處的政策及分組工作順利完成，亦成功舉辦多場對台人員座談會。

這群熱忱地以專業知識服務社會、在建築、環境及學術界有著傑出人士身力共下，亦一向是繼了「Better-By」而讓工程設計與計劃引入工程、工程、建築與環境設計及建造、環境與社會及專業知識的知識與專業的發展。這群熱忱地以及工程師的「Better-By」而讓工程設計與計劃已上載於香港工程師學會的官方網站，方便香港建築師、土木及環境工程師參考。



為了進一步瞭解世界寶貴(Better-File)的開發設計理念，香港中國網絡系統協會曾同香港電力局一同進行了三項工作：訪問了該開發商，瞭解該系統在市政規劃和系統管理、以及對用戶品安及品質與此種標準實施、為該開發商提供供電一貫的(Better-File)開發設計理念和製作上的建議。



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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.)

	<u>Milestone</u> (as set out in the approved project proposal appended to the project agreement)	<u>Original</u> target completion <u>date</u>	<u>Revised</u> target completion <u>date</u> (if applicable)	<u>Status</u> (C/P/D) #	<u>Reason for deviation</u> from its original target <u>completion date</u>
(a)	Forming of project committee & planning the project detail and schedule	31/03/2018	N.A.	C	N.A.
(b)	Confirm the 3D scanning methodology and rent the equipment required	30/04/2018	N.A.	C	N.A.
(c)	Perform research and perform technical evaluation with the latest ISO test standards	31/08/2018	N.A.	C	N.A.
(d)	Collect adults' headform sample from eyewear manufacturers' factories	30/09/2018	NA	C	NA
(e)	Design and produce promotional pamphlet to promote the 3D headform database, headform models and 'Better-Fit' guidebook	30/09/2018	N.A.	C	N.A.
(f)	Set up the booth at Hong Kong Optical Fair 2018 and collect adult's headform samples at the booth	31/10/2018	N.A.	C	N.A.
(g)	Collect students' headform samples from schools	28/02/2019	N.A.	C	N.A.
(h)	Analyse headform features of headform samples in the database and construct 8 representable headform models	28/02/2019	N.A.	C	N.A.
(i)	Analyse headform features of headform samples in the database for developing contents related to the application of headform features in eyewear design of the guidebook	28/02/2019	N.A.	C	N.A.
(j)	Consult industrial practitioners on the contents of the eyewear design guidebook	28/02/2019	N.A.	C	N.A.
(k)	Building of the database for eyewear industry	31/03/2019	N.A.	C	N.A.
(l)	Draft and finalise the contents and coordinate the compilation of the guidebook	31/7/2019	N.A.	C	N.A.
(m)	Develop the physical headform models	30/6/2019	N.A.	C	N.A.
(n)	Publish the guidebook and extract the contents for the production of the workshop teaching material	30/9/2019	N.A.	C	N.A.
(o)	Define the details and produce promotional pamphlets on 'better-fit' workshops and promote the workshops through eDM and the Applicant's website	31/7/2019	N.A.	C	N.A.
(p)	Organize the 'better-fit' eyewear design workshops	28/02/2020	N.A.	C	N.A.
(q)	Design and place advertisement of the project achievements in the applicant's year book	28/02/2020	N.A.	C	N.A.

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

Applying ITF seed funding project to develop a virtual 3D model with perceptive capabilities for eyewear
Design.
