

**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.	<b>D18 003 006</b>
Project title	<b>Adoption of world class technology benchmarking mechanisms for precision tooling industry and formulate advancement roadmap</b>
Period covered	From <b>15/03/19</b> to <b>14/03/22</b> (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)

The precision tooling industry of Hong Kong has striven for continuous improvement in past decades. Many SMEs engaged in precision tooling making have invested on overseas advanced manufacturing machineries and systems. However, most of their business only in manufacturing of middle-priced range precision tooling currently, partially for the local market and partially for the high value-adding overseas market of Europe and North America. On the other hand, local precision tooling making SMEs are suffering from strong competition from Mainland China and counterparts from other developing countries and their traditional mid-price ranged market are gradually eroding. The local precision tooling companies need to upgrade their capabilities in order to keep abreast of the market and tap opportunities into the enormous overseas markets of middle-high priced range and top-class precision and ultra-precision tooling for automotive parts, medical devices, electronic and optical components in order to survive and have further business development.

### Project Objective(s) (in about 80 words)

- To transfer, implement and adopt a world-class technology and operation model as well as build up local database for supporting mould & die manufacturers to understand and evaluate their current position of a business or organization in relation to the best practice of world class tooling manufacturers.
- To highlight the areas that have the greatest potential for near-term and long-term improvement of local precision tooling industry, in order to formulate the roadmap for industry advancement towards world-class manufacturing.

### Grantee/Collaborating Organisation/Implementation Agent

Grantee	<u>Federation of Hong Kong Industries</u>
Collaborating Organisation(s)	<u>Hong Kong Mould &amp; Die Council</u>
	<u>Hong Kong Federation of Innovative Technologies and Manufacturing Industries Limited</u>
	<u>Hong Kong Automation Technology Council</u>
	<u>Hong Kong Auto Parts Industry Association Limited</u>
	<u>Hong Kong Foundry Association Limited</u>
	<u>The Hong Kong Metals Manufacturers Association Limited</u>
	<u>The Hong Kong Plastics Manufacturers Association Limited</u>
	<u>Hong Kong &amp; Kowloon Plastic Products Merchants United Association Limited</u>
	<u>Hong Kong (SME) Economic and Trade Promotional Association Limited</u>
Implementation Agent(s)	<u>Hong Kong Productivity Council</u>

### Key Personnel

		<u>Company/Organisation</u>	<u>Tel No. &amp; Fax No.</u>
Project Co-ordinator	<u>Mr. Felix Choi</u>	<u>Federation of Hong Kong Industries</u>	<u>852-2732 3188/ 852-2721 3494</u>
Deputy Project Co-ordinator	<u>Mr. Eddie Wong</u>	<u>Federation of Hong Kong Industries</u>	<u>852-2732 3188/ 852-2721 3494</u>

**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	<u>15/03/19</u>	<u>14/03/21</u>	<u>24</u>
Revised (if applicable)	<u>15/03/19</u>	<u>14/03/22</u>	<u>36</u>

## 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.)

	<b>Project deliverable</b>	<b>Quantifiable target number</b> (e.g. 100 participants)	<b>Actual result achieved</b> (e.g. 90 participants)	<b>Reasons for not achieving the target, if applicable</b> (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)	Project Steering Committee	1 Project steering committee	1 Project steering committee	N.A.
b)	1-day awareness seminar on "World Class Operation Benchmarking Model" (60 participants)	1 awareness seminar (60 participants) Duration: 6 hours	1 awareness seminar (61 participants) Duration: 6 hours	N.A.
c)	Technology and operation benchmarking model for Hong Kong Precision Tooling Industry	1 benchmarking model	1 benchmarking model	N.A.
d)	Setup an e-platform for data input	1 e-platform	1 e-platform (Link: <a href="http://bench-marking.cc">http://bench-marking.cc</a> )	
e)	Setup a benchmarking database	1 benchmarking database with 100 local SMEs' KPIs	1 benchmarking database with a total of 101 local SMEs' KPIs collected	N.A.
f)	Two on-site detailed benchmarking study (based on 10 selected SMEs) and roadmap for precision tooling industry technology and operation performance advancement	2 on-site study + 1 roadmap for precision tooling industry advancement	2 on-site study+1 roadmap for precision tooling industry advancement	N.A.
g)	1-day debriefing seminar (60 participants)	1 debriefing seminar (60 participants) Duration: 6 hours	1 debriefing seminar (61 participants) Duration:6 hours	N.A.
h)	1-day symposium to debrief summary on operations enhancement (80 participants)	1 symposium (80 participants) Duration: 6 hours	1 symposium (92 participants) Duration:6 hours 30mins	N.A.
i)	World class precision tooling manufacturing technology and operations benchmarking manual	1 manual (200 copies and e-version)	1 manual (200 copies and e-version)	N.A.

j)	A series of advertisements for promoting various deliverables under the project.	9 advertisements (5 full-page advertisements in FHKI's <i>Hong Kong Industrialist</i> magazine; 2 full-page inside back cover advertisements in Hong Kong Mould and Die Council's annual publication; 2 electronic advertisements on the website of Hong Kong Mould and Die Council)	9 advertisements were published including i) 5 full-page advertisements in FHKI's <i>Hong Kong Industrialist</i> magazine; ii) 2 full-page inside back cover advertisements in Hong Kong Mould and Die Council's annual publication; and iii) 2 electronic advertisements on the website of Hong Kong Mould and Die Council	N.A.
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**Details of the deliverables (e.g. date, duration, venue, speaker, topic discussed, etc.)**

(Please list out in table format if necessary.)

<p>(a) A Project Steering Committee was formed to plan and oversee the project. It comprised of:</p> <ol style="list-style-type: none"> <li>1. Felix Choi (General Committee Member, FHKI)</li> <li>2. Eddie Wong (Vice Conveners – Education &amp; Technology Development Committee, Group 14 (Mould and Die Manufacturing), FHKI)</li> <li>3. Maggie Tsoi (Conveners – Mainland &amp; Overseas Affairs Committee, Group 14 (Mould and Die Manufacturing), FHKI)</li> <li>4. Francis Lai (Senior Consultant, Smart Manufacturing and Mainland Business, HKPC; <i>retitled as Head, Metals Technology and Industry Development Unit, Smart Manufacturing Division, HKPC since October 2021</i>)</li> <li>5. Ir. Samson Suen (Fellow, MI Division, HKIE)</li> </ol> <p>(b) The awareness seminar was organised on 15 Jul 2019 (time: 09:30-12:30, 14:00-17:00) in Classroom 126 under HKPC premises to debrief and introduce “World Class Operation Benchmarking Model of European Precision Tooling Industry”, which was developed and implemented by WBA Achener Werkzeugbau Akademie (WBAAWA) of Germany for the existing performance and technologies of world class overseas precision tooling manufacturers. Mr Christoph Kelzenberg from WBA Werkzeugbau Akademie was the speaker of the seminar. 61 participants attended the seminar. 1 e-pamphlet leaflet was designed and distributed to industry. Questionnaire survey was conducted after the completion of this awareness seminar to evaluate the participants' feedback. The duration of the awareness seminar was 6 hours.</p> <p>(c) The technology and operation benchmarking model for Hong Kong Precision Tooling Industry in Chinese and English was established in Sep 2019 based on the well-established technology and operation benchmarking model in Germany developed by WBAAWA that has been used for a decade and applied in other European, American and South African countries. Total 218 KPIs were developed. 10 companies were visited to let HKPC consultants (Mr Francis Lai and Mr Penny Chan) and WBAAWA experts (Mr Jens Helbig and Mr Christoph Kelzenberg) have a concrete overview of HK tooling industry.</p>
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Date	Duration	Venue	What have been visited
10.07.2019	1.5 hr	Superband Mould Company Limited	Technological aspect: Milling and sink-EDM operation and performance
10.07.2019	1.5 hr	Datamatic CNC Engineering Company Limited	Technological aspect: Milling and sink-EDM operation and performance
10.07.2019	1.5 hr	Hongrita Mold Limited	Technological aspect: Wire-EDM and Grinding operation and performance
10.07.2019	1.5 hr	Vigor Precision Ltd	Technological aspect: Wire-EDM and Grinding operation and performance
10.07.2019	1.5 hr	Lap Chi Moulding company Limited	Technological aspect: CAD/CAM design and programming strategy
11.07.2019	1.5 hr	Fullmarks Metal Technology Company	Technological aspect: CAD/CAM design and programming strategy
11.07.2019	1.5 hr	Kenta Enterprise Company Limited	Operational aspect: Cost and data transparency
11.07.2019	1.5 hr	Shun Hing Industrial International Limited	Operational aspect: Cost and data transparency
11.07.2019	1.5 hr	TK Group (Holdings) Limited	Operational aspect: Order fulfillment process and production planning
11.07.2019	1.5 hr	Eva Precision Industrial Holdings Limited	Operational aspect: Order fulfillment process and production planning

- (d) An e-platform (Link: <http://bench-marking.cc>) was established in Oct 2019 for data input. It was comprised of collected technology and operational performance indicators, as well as the overall performance of HK tooling industry for each KPIs established for the reference of the industry. Local tooling manufacturers can access for free throughout the project period.
- (e) A benchmarking database was consolidated. It included the technology and operational performance indicators from local precision tooling manufacturing SMEs as well as internal tooling shops/departments of plastic and metal products manufacturers. 2 industry-wide data collection exercises were conducted systematically during the project period. 2 rounds of EDM were sent through HKPC database, over 600 companies were reached and eventually 101 companies provided their technological and operational KPIs for the database, in which 100 companies provided their KPIs in both 1<sup>st</sup> and 2<sup>nd</sup> preliminary benchmarking study and 1 additional company joined the 2<sup>nd</sup> benchmarking study. The performance of HK precision tooling manufacturers and tool making shops under plastics and metals product manufacturers were directly compared with the performance of world class manufacturers and the average performance of Germany manufacturers collected by WBAAWA in 2019 and 2021 with 1<sup>st</sup> round and 2<sup>nd</sup> round of KPI benchmarking data collected in Hong Kong respectively during the corresponding year. The insights and findings were shared to HK SMEs during the debriefing seminar and symposium held on 19 Dec 2019 and 1 March 2022 respectively. The Hong Kong average standard in 2019 and 2021 were also compiled and visualized in e-platform. It was found that the average performance gap of HK tooling manufacturers and internal tool shops compared with world class counterparts and Germany average was narrowed down according to the KPI figures collected.

- (f) 1 on-site detailed benchmarking study (1 on-site detailed benchmarking study per year, total 2 years) with 2 Germany experts of WBAAWA (Mr Jens Helbig and Mr Marcel Wilms) from Germany and 2 HKPC consultants (Mr Francis Lai and Mr Penny Chan) for 10 selected local SMEs was conducted from 10 to 13 Dec 2019 and 16 to 17 Dec 2019 respectively. The list of companies is as below:

Date	Duration	Venue	Visited company	Company nature	What has been done
10.12.2019	4 hr	Foshan	Superband Mould Company Limited (mother company in HK is Hong Kong Silver Harvest Ltd)	Tooling manufacturers with 100 workers or below	On-site detailed benchmarking and verification of the KPIs data
10.12.2019	4 hr	Guangzhou	Datamatic CNC Engineering Company Limited	Tooling manufacturers with more than 100 workers	On-site detailed benchmarking and verification of the KPIs data
11.12.2019	4 hr	Zhongshan	Hongrita Mold Limited	(Tooling manufacturers with more than 100 workers)	On-site detailed benchmarking and verification of the KPIs data
12.12.2019	4 hr	Dongguan	Vigor Precision Ltd	Companies with in-house tool shop with more than 100 workers	On-site detailed benchmarking and verification of the KPIs data
12.12.2019	4 hr	Dongguan	Lap Chi Moulding company Limited	Tooling manufacturers with 100 workers or below	On-site detailed benchmarking and verification of the KPIs data
13.12.2019	4 hr	Dongguan	Fullmarks Metal Technology Company	Tooling manufacturers with 100 workers or below	On-site detailed benchmarking and verification of the KPIs data
13.12.2019	4 hr	Dongguan	Kenta Enterprise Company Limited	Companies with in-house tool shop with 100 workers or below	On-site detailed benchmarking and verification of the KPIs data
16.12.2019	4 hr	Dongguan	Shun Hing Industrial International Limited	Companies with in-house tool shop with 100 workers or below	On-site detailed benchmarking and verification of the KPIs data
17.12.2019	4 hr	Shenzhen	TK Group (Holdings) Limited	Companies with in-house tool shop with more than 100 workers	On-site detailed benchmarking and verification of the KPIs data
17.12.2019	4 hr	Shenzhen	Eva Precision Industrial Holdings Limited	Tooling manufacturers with more than 100 workers	On-site detailed benchmarking and verification of the KPIs data

Then, roadmap for precision tooling industry advancement to narrow down the performance gap in different areas between local tooling manufacturing SMEs cum internal tool shops and world class manufacturers according to the established benchmarking model was carried out from 11 Nov 2020 to 12 Nov 2021. HKPC consultants conducted on-site visit to the abovementioned 10 companies for 4 times to monitor the progress in KPIs improvement and provided further advice towards each company in the technology and operation advancement exercise towards world class tooling manufacturing. HKPC consultants also communicated with overseas experts of WBAAWA on the problems and queries of each company and provided further advice during the guidance period for industry advancement.

4 times of on-site guidance for industry advancement and roadmap upgrade were conducted on dates with purposes as below:

**1<sup>st</sup> follow up on-site industry advancement visit (for elaboration of performance gaps according to the established KPIs benchmarking model and comments from Germany experts and providing advice for advancement)**

Date	Venue	Company Visited
11.11.2020	Zhongshan	Hongrita Mold Limited
12.11.2020	Guangzhou	Datamatic CNC Engineering Company Limited
13.11.2020	Dongguan	Kenta Enterprise Company Limited
16.11.2020	Foshan	Superband Mould Company Limited
17.11.2020	Dongguan	Vigor Precision Ltd
18.11.2020	Dongguan	Lap Chi Moulding company Limited
19.11.2020	Dongguan	Fullmarks Metal Technology Company
20.11.2020	Shenzhen	TK Group(Holdings) Limited
23.11.2020	Shenzhen	Eva Precision Industrial Holdings Limited
24.11.2020	Dongguan	Shun Hing Industrial International Limited

**2<sup>nd</sup> follow up on-site industry advancement visit (for monitoring of the KPI advancement progress and providing further advice)**

Date	Venue	Company Visited
4.01.2021	Dongguan	Shun Hing Industrial International Limited
5.01.2021	Dongguan	Vigor Precision Ltd
6.01.2021	Shenzhen	TK Group(Holdings) Limited
7.01.2021	Guangzhou	Datamatic CNC Engineering Company Limited
8.01.2021	Dongguan	Fullmarks Metal Technology Company
11.01.2021	Dongguan	Lap Chi Moulding company Limited
12.01.2021	Shenzhen	Eva Precision Industrial Holdings Limited
13.01.2021	Dongguan	Kenta Enterprise Company Limited
14.01.2021	Foshan	Superband Mould Company Limited
15.01.2021	Zhongshan	Hongrita Mold Limited

**3<sup>rd</sup> follow up on-site industry advancement visit (for monitoring of the KPI advancement progress and providing further advice)**

Date	Venue	Company Visited
8.03.2021	Shenzhen	Eva Precision Industrial Holdings Limited
9.03.2021	Guangzhou	Datamatic CNC Engineering Company Limited
10.03.2021	Foshan	Superband Mould Company Limited
11.03.2021	Dongguan	Vigor Precision Ltd
12.03.2021	Dongguan	Lap Chi Moulding company Limited
22.03.2021	Dongguan	Fullmarks Metal Technology Company
23.03.2021	Dongguan	Kenta Enterprise Company Limited
24.03.2021	Dongguan	Shun Hing Industrial International Limited
25.03.2021	Shenzhen	TK Group(Holdings) Limited
26.03.2021	Zhongshan	Hongrita Mold Limited



**4<sup>th</sup> follow up on-site industry advancement visit (for monitoring of KPI advancement progress, evaluating the achievements and providing further advice)**

Date	Venue	Company Visited
8.11.2021	Foshan	Superband Mould Company Limited
8.11.2021	Guangzhou	Datamatic CNC Engineering Company Limited
9.11.2021	Shenzhen	Eva Precision Industrial Holdings Limited
9.11.2021	Shenzhen	TK Group(Holdings) Limited
10.11.2021	Dongguan	Lap Chi Moulding company Limited
10.11.2021	Dongguan	Vigor Precision Ltd
11.11.2021	Dongguan	Kenta Enterprise Company Limited
11.11.2021	Dongguan	Shun Hing Industrial International Limited
12.11.2021	Dongguan	Fullmarks Metal Technology Company
12.11.2021	Zhongshan	Hongrita Mold Limited

After the completion of 4 industry advancement guidance visits, 2<sup>nd</sup> on-site detailed benchmarking study for 10 selected local SMEs was conducted by 2 HKPC consultants (Mr Grayson Sun and Dr Haokun Yang) together with 2 Germany experts from WBAAWA (Mr Niklas Kessler and Mr Marcel Wilms) during 10 to 14 Jan 2022 and 17 & 21 Jan 2022. Due to world-wide epidemic and quarantine arrangement among HK, Germany and Mainland China, Germany experts could only carry out the 2<sup>nd</sup> detailed study in hybrid mode with ZOOM via internet with the assistance of HKPC consultants to hold the video camera and mobile phone during factory and tool shop visits.

Date	Duration	Venue	Visited company	What has been done
10.01.2022	4 hr	Guangzhou	Datamatic CNC Engineering Company Limited	2 <sup>nd</sup> On-site detailed benchmarking and verification of the KPIs data.  Evaluation on advancement in KPIs and gap from world class tooling manufacturers and internal tool shops
11.01.2022	4 hr	Foshan	Superband Mould Company Limited	
12.01.2022	4 hr	Dongguan	Vigor Precision Ltd	
13.01.2022	4 hr	Dongguan	Fullmarks Metal Technology Company	
14.01.2022	4 hr	Dongguan	Kenta Enterprise Company Limited	
17.01.2020	4 hr	Dongguan	Shun Hing Industrial International Limited	
18.01.2022	4 hr	Shenzhen	TK Group(Holdings) Limited	
19.01.2022	4 hr	Shenzhen	Eva Precision Industrial Holdings Limited	
20.01.2022	4 hr	Dongguan	Lap Chi Moulding company Limited	
21.01.2022	4 hr	Zhongshan	Hongrita Mold Limited	

It was identified that the performance gaps on KPI between local tooling manufacturers and internal tool shops with world class manufacturers and average of Germany counterparts have been narrowed down. Some key improvement in performance of local tooling manufacturers and internal tool shops are as below:

1. To improve the cost data transparency tooling workshop.
2. To improve the order proceeding process.
3. To improve the manufacturing planning and detail scheduling.
4. To improve the workshop management.
5. To improve the manufacturing procedure technologies.
6. To implement the industrial 4.0 concept.

- (g) The 1-day debriefing seminar was organised on 19 Dec 2019 in Innospace under HKPC premises to debrief local benchmarking study findings versus performance of world class manufacturers and roadmap for local industry advancement. Mr Jens Helbig from WBA Werkzeugbau Akademie, Mr Marcel Wilms from Fraunhofer Institute for Production Technology together with Mr Francis Lai from HKPC conducted the seminar. The 6-hour seminar explained findings on the difference of achievements in 218 KPIs between world class mould makers / in-house tool shops local companies in detail and solutions to close the gap. 61 participants attended the seminar. An e-pamphlet leaflet was designed and distributed to industry. Questionnaire survey was conducted after completion of this debriefing seminar to evaluate the participants' feedback.
- (h) The 1-day symposium (with extended duration of 6 hours and 30 mins) to debrief summaries on operations enhancement was held on 1 March 2022 with 92 participants joined. Due to severe epidemic in HK in February and March 2022, the symposium was conducted in webinar mode with advance endorsement from SDF vetting committee and TID. A total of 8 speakers have made presentations on the symposium with particulars as below.
- 2 HKPC consultants (Mr Francis Lai and Mr Grayson Sun) – industry advancement findings and summaries of 2<sup>nd</sup> preliminary benchmarking study;
  - 2 WBAWA experts (Mr Niklas Kessler and Mr Sebastian Hähnel) – 2<sup>nd</sup> hybrid detailed benchmarking study findings and further roadmap of local tooling industry towards world class manufacturing;
  - 4 representatives of SMEs participated in the detailed on-site benchmarking study shared their cases, actions taken and results achieved on technology, operation and business improvement in two to three focus areas according to the benchmarking studies. Those 4 companies were Hongrita Mold Limited, Superband Mould Company Limited, TK Group (Holdings) Limited and Vigor Precision Ltd.
- (i) A world class precision tooling manufacturing technology and operations benchmarking manual of 142 pages has been compiled. It comprised contents on
- Particulars of the developed benchmarking model and mechanisms;
  - Data collection methods and forms;
  - Cases studies on technology and operations advancement of 10 selected companies;
  - Current performance of world class tooling manufacturers;
  - Gap between HK and world class counterparts; and
  - Roadmap for industry advancement of local tooling industry.
- 200 hardcopies of the manual were printed and distributed to members of the project applicant, collaborating organisations and other industry players via HKPC. A small amount is kept by the project applicant for further distribution and reading by the industry practitioners after completion of project. Softcopy of the manual has been uploaded to project applicant, HKPC websites, as well as e-platform under this project for public access.
- (j) A total of 9 advertisements were published to promote various deliverables under this project with particulars as below:
- 5 full-page advertisements on *Hong Kong Industrialist* magazine of FHKI.
    1. to promote the 1-day awareness seminar (on issue Jul-Aug 2019)
    2. to promote the world-class benchmarking model, drive manufacturers to join the 1st preliminary benchmarking study and input their data of the e-platform (on issue Jan-Feb 2020);
    3. to disseminate interim summary of findings of 1<sup>st</sup> preliminary and detailed benchmarking study, drive companies to join the 2nd preliminary benchmarking study as well as the debriefing seminar. (on issue Apr-Jun 2020);
    4. to promote 1-day symposium (on issue Feb-Apr 2022); and
    5. to promote the benchmarking manual as well as driving manufacturers to submit performance data towards the benchmarking e-platform established under the project continuously after completion of this project (on issue May-Jul 2021).
  - 2 electronic banner advertisements for 12 months on website of Hong Kong Mould and Die Council (HKMDC).
    1. to drive local SMEs input their data to the established e-platform for benchmarking (<http://www.hkmdc.org.hk/>); and
    2. to drive local SMEs continue to input their data to the established e-platform for the 2<sup>nd</sup> preliminary benchmarking study (<http://bench-marking.cc/>)
  - 2 full-page advertisements on annual publication of Hong Kong Mould and Die Council (HKMDC).
    1. to introduce the established benchmarking model and e-platform for performance data collection as well as driving local tool makers to join the 2nd preliminary benchmarking study (on 2019/20 annual publication); and
    2. to promote the symposium, benchmarking manual and drive further industry participation on the benchmarking studies upon completion of the project (on 2021/22 annual publication)

### 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)	To form a project steering committee. To organise a 1-day awareness seminar on "World Class Operation Benchmarking Model"	31.05.2019	15.7.2019	C (Change was pre-approved by TID)
(b)	To promote the project deliverables towards HK precision mould and die makers as well as plastics and metals products manufacturers with HKPC and collaborating organisations via advertisements on magazines, annual publications, websites and other media.	14.03.2021	14.03.2022	C (Change was pre-approved by TID)
(c)	To transfer and elaborate in detail world class technology and operation benchmarking model to local precision tooling industry.	30.06.2019		C
(d)	To set up a local benchmarking database of precision tooling industries and preform preliminary benchmarking study with world class tooling manufacturers To compile an e-platform and upload the collected KPIs to the platform for further data input and performance assessment by companies contributing those KPI data To collect key performance data in different aspects from at least 100 local SMEs engaged in precision tooling manufacturing or plastics/metals products manufacturing and having internal tool making shops according to developed benchmarking model.	30.11.2019		C
(e)	To conduct 1st on-site detailed technology and operation benchmarking study for 10 selected SMEs To formulate roadmap for local precision tooling industry technology and operation performance advancement	14.12.2019	19.12.2019	C (Change was pre-approved by TID)
(f)	To promote and hold 1-day debriefing seminar on the local world class technology and operation benchmarking model for tooling industry, findings of 1st preliminary and detailed benchmarking study as well as the roadmap for industry advancement To post advertisement on FHK1 magazine to promote 2 <sup>nd</sup> benchmarking study that comprises interim findings summary of 1 <sup>st</sup> benchmarking study	14.03.2020		C (Change was pre-approved by TID)

(g)	To conduct industry advancement program by providing on-site and phone/email guidance towards 10 selected companies according to roadmap and world class benchmarking results for 1 year.	14.12.2020	30.11.2021	C (Change was pre-approved by TID)
(h)	To enrich the benchmarking database by conducting 2nd preliminary benchmarking study and collect updated key performance data from at least local 100 SMEs.	14.12.2020	30.11.2021	C (Change was pre-approved by TID)
(i)	To conduct 2nd on-site detailed benchmarking study with 10 selected SMEs and formulate further roadmap for precision tooling industry technology and operation performance advancement.	31.01.2021	31.01.2022	C (Change was pre-approved by TID)
(j)	To promote and hold 1-day symposium in virtual mode to debrief summary and experience on operations enhancement for local tooling industry.	14.02.2021	14.03.2022	C (Change was pre-approved by TID)
(k)	To compile a comprehensive "World Class Precision Tooling Manufacturing Technology and Operations Benchmarking Manual" To print and distribute 200 copies of the manual to targeted HK companies To upload softcopy of the manual to applicant's and HKPC's website, as well as e-platform for public access	14.02.2021	14.03.2022	C (Change was pre-approved by TID)

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

Hong Kong Mould and Die Council under FHKI and HKPC will continue to promote and distribute the compiled "World Class Precision Tooling Manufacturing Technology and Operations Benchmarking Manual" via their websites for 1 year in completion of the project.

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HKPC and/or Hong Kong Mould and Die Council under FHKI, where appropriate, will continue to organise seminars to promote the benchmarking model, e-platform and drive more tooling manufacturers and internal tool shops to make use of the model to self-verify their performance against the local average, Germany average and world class manufacturers upon completion of the project on self-finance basis.

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HKPC will continue to offer consultancy services on on-site/hybrid technology and operation benchmarking based on the established "World Class Operation Benchmarking Model" of tool manufacturing operations to support tooling manufacturers and plastic and metals products manufacturers with internal tool shops to upgrade their operations and advance their technologies under projects on self-finance basis after project completion.

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