

**Guide to
Enhanced Competency Framework
on Fintech**

Hong Kong Monetary Authority

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Table of Contents

1	Introduction	3
2	Objectives	4
3	Scope of Application	5
4	Competency Standards	8
5	Qualification Standards and Certification	9
6	Training Programmes and Examinations	12
7	Grandfathering.....	12
8	Modular Exemption.....	14
9	Continuing Professional Development (CPD)	18
10	Maintenance of Relevant Records.....	20
11	Governance and administration.....	20
12	Accreditation	20
	Annex 1 – ECF-Fintech: Key Roles and Tasks for Relevant Practitioners	22
	Annex 2 – ECF-Fintech: Competency Framework	27
	Annex 3 – ECF-Fintech: Learning Outcomes and Topics.....	30
	Annex 4 – ECF-Fintech: Certification Arrangement.....	38

1 Introduction

- 1.1 The Enhanced Competency Framework (ECF) is a collaborative effort of the Hong Kong Monetary Authority (HKMA) with relevant professional bodies and the banking sector in establishing a set of common and transparent competency standards for different professional areas which are central to the safety and soundness of authorized institutions (AIs) and where talent shortages are more apparent. The development of a set of competency standards will enable more effective training for new entrants and the ongoing professional development of existing practitioners in the banking industry, which will contribute to maintaining the competitiveness of Hong Kong as an international financial centre. To date, the HKMA has launched seven ECF modules, namely private wealth management, anti-money laundering and counter-financing of terrorism, cybersecurity, treasury management, retail wealth management, credit risk management and operational risk management.
- 1.2 Financial technology (Fintech) is reshaping the financial services industry globally. Banks in Hong Kong have been proactively adopting Fintech in their operations and services to enhance cost efficiency and customers' experience. According to a survey conducted by the HKMA in 2020, 86% of banks had adopted or were planning to adopt Fintech solutions across all types of financial services. Recently, the HKMA has unveiled a new "Fintech 2025" strategy which aims to encourage the financial sector to adopt technology comprehensively by 2025 and build a vibrant Fintech ecosystem in Hong Kong. A Fintech-savvy workforce is crucial to supporting the rapid adoption of Fintech in the banking industry.
- 1.3 In light of the strong growth in demand for Fintech talent, there is a need to develop the talent pipeline and enhance existing professional competencies in the Fintech area by equipping banking practitioners with the required professional knowledge, job skills, and ethical behavior through the introduction of a banking industry-wide competency framework.
- 1.4 The ECF on Fintech (ECF-Fintech), which includes Regulatory Technology (Regtech) as a sub-set of Fintech, is aimed at facilitating banking practitioners to acquire relevant Fintech knowledge and develop professional competencies and capabilities in the Fintech area more effectively.

2 Objectives

2.1 The ECF-Fintech¹ is a non-statutory framework which sets out the common core competencies and capabilities required of Fintech practitioners in Hong Kong's banking industry. The objectives of the ECF-Fintech are twofold:

- (a) to develop a sustainable Fintech talent pool for the banking industry; and
- (b) to raise and maintain the professional competence of Fintech practitioners in the banking industry.

2.2 Although the ECF-Fintech is not a mandatory licensing regime, AIs are strongly encouraged to adopt it for purposes including but not limited to:

- (a) serving as a benchmark to determine the level of competence required and assess the ongoing competence of Fintech practitioners;
- (b) supporting relevant employees to attend training programmes and examinations that meet the ECF-Fintech benchmark;
- (c) supporting the continuing professional development (CPD) of individual employees; and
- (d) promoting the ECF-Fintech as an industry-recognised qualification, including for recruitment purposes.

2.3 The ECF-Fintech is designed to cover Fintech practitioners who are performing functions that involve technological innovation for financial services in an AI in Hong Kong. The structured competency framework would enable Fintech practitioners to develop the required technical skills and professional knowledge for their Fintech-related job roles.

¹ For the purpose of ECF-Fintech, "Fintech" refers to modern and innovative technology that improves the delivery and use of financial services.

2.4 The design of the ECF-Fintech comprises the following two elements:

- **Competency standards**

These standards are derived from the job skills and competencies required for functions and job roles that involve technological innovation for financial services in the banking industry.

- **Qualification standards**

These standards are derived from prevailing market practices in qualifying Fintech practitioners, including certifications recognised by AIs in Hong Kong, grandfathering, and CPD for the required qualifications.

3 Scope of Application

3.1 The ECF-Fintech aims to develop an all-rounded Fintech competency framework to enhance the professional competencies of Fintech practitioners working in functions that involve technological innovation for financial services in the banking industry. Specifically, it is aimed at “Relevant Practitioners” (RPs) located in the Hong Kong office of an AI whose primary responsibilities are to perform one or multiple job roles listed in Table 1 below.

Table 1 – Job roles of the ECF-Fintech

Job Roles	Role Description (Core Level)	Role Description (Professional Level)
Role 1 – Fintech Solution Development	Design, develop, test, and deliver the core functional and technical aspects of Fintech solutions for the AI. Work closely with cross-functional teams, and coordinate projects on Fintech solutions throughout the software development lifecycle.	Provide expert advice on Fintech applications. Work with cross-functional teams to build and implement Fintech solutions for the AI.
Role 2 – Fintech Product Design	Design and develop new Fintech products with innovative features and functionalities driven by user needs or market forces.	Oversee the design, development, and management of Fintech products and ensure products’ alignment with the AI’s overall Fintech strategic direction and product compliance.

Role 3 – Fintech Strategy and Management	Assist in the research and execution of Fintech strategy, and manage the Fintech initiatives of the AI in collaboration with internal stakeholders and external vendors and partners.	Drive Fintech agenda within the AI, and provide strategic direction for the AI’s Fintech initiatives.
Role 4 – Regtech	Assist in Regtech research, use case formulation, regulatory and business requirements consolidation, vendor selection and Regtech solution development, etc. along the Regtech adoption journey to enhance the efficiency and effectiveness of the AI’s risk management and regulatory compliance.	Lead and drive the design, development and implementation of Regtech solutions and the change management to ensure alignment with the AI’s overall Regtech strategy and realisation of benefits of Regtech.

- 3.2 The definition of RPs has taken into account differences among AIs in how Fintech practitioners are assigned within their organisational structure and job design (e.g., as an independent Fintech unit within the AI’s back office function or as part of a more comprehensive strategy which involves experts from the product design/development team, operations team, technology team, and/or risk and compliance team). Functional roles rather than the functional titles of staff members should be essential in considering whether the definition of RPs is met. To facilitate the determination of whether a staff member falls within the scope of RPs, the key tasks of different job roles are specified in **Annex 1** as a reference.
- 3.3 AIs are responsible for ensuring that RPs who perform duties in offshore delivery centres and the subsidiaries of the AIs are competent and have the capability as required under the ECF-Fintech. However, we understand that staff members’ qualifications outside Hong Kong may be different from the required qualifications set out in the ECF-Fintech. To allow flexibility in the implementation of the ECF-Fintech, AIs may exercise their own judgment in evaluating whether those staff possess equivalent qualifications.

- 3.4 Fintech outsourcing could transfer risk, management and compliance to a third party who may not be regulated, and who may be operating at an offshore location. To mitigate this concern without hindering the efficiency and effectiveness of business operations, AIs are suggested to exercise due diligence in evaluating the capability of potential service providers and the competency of their staff.
- 3.5 The ECF-Fintech is not intended to cover staff members performing the following functions:
- Staff performing supporting roles or similar incidental roles for Fintech functions and projects within an AI, including but not limited to IT-related functions (e.g. IT helpdesk operations, IT support), compliance and finance functions, are outside the scope of the ECF-Fintech at this stage.
 - Staff performing cybersecurity-related functions (e.g. IT security operations and delivery, IT risk management, IT audit) as they are already subject to the ECF-Cybersecurity. Please refer to the HKMA's Guide to ECF on Cybersecurity for details of these roles.
 - Staff in Fintech-related functions performing solely clerical and administrative duties or other incidental functions.
 - Staff with minimal exposure to tasks involving Fintech.
 - Staff who are only end-users of Fintech solutions such as relationship managers and officers, credit approval officers and transaction monitoring officers.
- 3.6 It may be the case that AIs have staff members who assume multiple job roles under the Fintech and/or traditional functions that could cut across several job roles under the ECF-Fintech. In such a case, AIs will have the flexibility to determine which job role a staff member falls within for the purpose of ECF-Fintech by assessing which role accounts for the majority of the staff member's job responsibility. For the Professional Level of the ECF-Fintech, AIs should also take into consideration the staff member's preferred track to ECF certification based on their preferred career development path.

- 3.7 For the avoidance of doubt, a staff member is not required to work full time in Fintech-related functions or perform all the key tasks specified in the job description in order to be classified as an RP. AIs are expected to adopt a principles-based approach when determining whether a staff member falls within the definition of RP for the ECF-Fintech by assessing the significance of the Fintech-related role performed by the staff member. If a staff member's job responsibility covers a majority of the key tasks detailed in ECF-Fintech's role description, such RP is considered within scope. AIs should be able to justify decisions made in this regard.

4 Competency Standards

- 4.1 Competency standards are set at two levels:

(a) Core Level

This level is applicable to entry level and junior level Fintech practitioners in AIs.

(b) Professional Level

This level is applicable to Fintech practitioners taking up middle or senior positions in AIs. In order to more accurately reflect the different areas of expertise, this level is further divided into two tracks: Management Track and Specialist Track.

- 4.2 It is crucial for Fintech practitioners to develop not only technical expertise but also a forward-looking mindset and professional knowledge to navigate the rapid changes of technology advancement, customer preferences and regulatory landscape.

- 4.3 Four key clusters of skills are captured under the ECF-Fintech competency framework:

- Technical Expertise (such as Artificial Intelligence, Big Data/Data Analytics, Cloud Computing, Distributed Ledger Technology, Open Banking and Application Programming Interface (API), Regtech, and Cybersecurity Awareness)

- Fintech Application and Project Management
- Banking Literacy
- Risk Management and Regulatory Compliance

4.4 The business complexities and technical dependencies that exist between various technologies integrated in a Fintech ecosystem increases the vulnerability of AIs to cyber attacks. In view of the evolving cybersecurity risks associated with Fintech, it is imperative that AIs equip their staff with the necessary knowledge and skills to guard against such risks. The ECF-Fintech recognises the importance of cybersecurity awareness in performing the job roles described in Table 1 and has incorporated this into the syllabus at both Core and Professional levels. For RPs who wish to acquire a deeper knowledge of cybersecurity and develop their professional competencies as cybersecurity practitioners, they may refer to the ECF-Cybersecurity for more details.

4.5 The competency framework for the ECF-Fintech with details on the qualifications required and CPD requirement for each job role of an RP is included in **Annex 2**.

5 Qualification Standards and Certification

5.1 Qualifications are set in accordance with the following two competency standards:

(a) Core Level

This level of qualification can be met by completing Module 1 to Module 4 of the ECF-Fintech Core Level training programme and having at least 1 year of relevant work experience in Fintech projects and/or any of the functions as specified in **Annex 1**.

(b) Professional Level

- **Management Track**

This level of qualification can be met by completing Module 5, Module 9, and Module 10 of the ECF-Fintech Professional Level training

programme on top of the Core Level qualification and having at least 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in **Annex 1**.

- **Specialist Track**

This level of qualification can be met by completing Module 5 and one of the following modules for fulfilling the technical specialist stream of the Professional Level training programme on top of the Core Level qualification, and having at least 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in **Annex 1**:

- Module 6 for AI and Big Data stream
- Module 7 for Distributed Ledger Technology stream
- Module 8 for Open Banking and API stream
- Module 11 for Regtech stream.

- 5.2 RPs may choose to pursue either the Management Track or one of the Specialist Tracks based on their current Fintech-related role and their preferred career development path.
- 5.3 In general, the administrator of the ECF-Fintech, the Hong Kong Institute of Bankers (HKIB), will consider whether the nature of work experience is substantially the same as that described in the Fintech roles in **Annex 1**. Relevant work experience may be obtained from AIs, financial regulators, and/or non-bank financial institutions. As for work experiences related to Fintech gained from other industries such as technology solution vendors, they will be considered on a case-by-case basis.
- 5.4 Details of the learning outcomes and syllabus are set out in **Annex 3**.
- 5.5 Upon attaining the qualifications and fulfilling the minimum work experience requirements, RPs may apply to the ECF-Fintech administrator, the HKIB, for certification as an Associate Fintech Professional (CPFinT(A)) or a Certified Fintech Professional (Management Track) (CPFinT(M)) or a Certified Fintech Professional (Specialist Track) (CPFinT(S)). Please refer to the diagrams at **Annex 4** for the certification arrangement.

(a) Associate Fintech Professional (CPFinT(A))

Successful completion of the Core Level certification plus 1 year of relevant work experience in Fintech projects and/or any of the functions as specified in **Annex 1**; or grandfathered pursuant to paragraph 7.1(a).

(b) Certified Fintech Professional (Management Track) (CPFinT(M))

Successful completion of the Management Track of the Professional Level certification plus 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in **Annex 1**; or grandfathered pursuant to paragraph 7.1(b).

(c) Certified Fintech Professional (Specialist Track) (CPFinT(S))

Successful completion of one of the Specialist Tracks of the Professional Level certification plus 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in **Annex 1**; or grandfathered pursuant to paragraph 7.1(c).

- (i) Specialist Track – AI and Big Data Stream (CPFinT (S-AIBD))
- (ii) Specialist Track – Distributed Ledger Technology Stream (CPFinT (S-DLT))
- (iii) Specialist Track – Open Banking and API Stream (CPFinT (S-OBAPI))
- (iv) Specialist Track – Regtech Stream (CPFinT (S-RT))

5.6 The ECF-Fintech certification is subject to annual renewal by the HKIB and the renewal of the certificate holder's membership of the HKIB. An RP is required to:

(a) complete the annual CPD requirement; and

(b) pay an annual certification fee to renew his/her ECF-Fintech certificate.

- 5.7 The ECF-Fintech is referenced to the Qualifications Framework (QF), with the Core Level and the Professional Level training programmes mapped at QF Level 5 (i.e., equivalent to bachelor's degree level) and QF Level 6 (i.e., equivalent to master's degree level) respectively.

6 Training Programmes and Examinations

- 6.1 RPs can meet the ECF-Fintech benchmark by:

(a) undertaking training programmes jointly offered by the HKIB and relevant universities, or other accredited training programmes; and

(b) passing examinations.

- 6.2 The training programme and examination provider for the ECF-Fintech is currently the HKIB, in collaboration with relevant universities.

7 Grandfathering

- 7.1 An RP may be grandfathered on a one-off basis based on his or her years of qualifying work experience. Such work experience need not be continuous. The detailed grandfathering requirements are as follows:

(a) Core Level

- At least 3 years of relevant work experience in Fintech projects and/or any of the functions as specified in **Annex 1**;
- Employed by an AI at the time of application.

(b) Professional Level (Management Track)

- At least 6 years of relevant work experience in Fintech projects and/or any of the functions as specified in **Annex 1**, of which at least 3 years are gained from respective Professional Level job roles;
- Employed by an AI at the time of application.

(c) Professional Level (Specialist Track)

- At least 6 years of relevant work experience in Fintech projects and/or any of the functions as specified in **Annex 1**, of which at least 3 years are gained from respective Professional Level job roles;
- Employed by an AI at the time of application.

- 7.2 The majority of work experience gained from different job roles will affect the certification title (i.e., CPFinT(M) or CPFinT(S)) upon grandfathering for Professional Level. For example, RPs with a majority of work experience gained from Role 2 – Fintech Product Design and/or Role 3 – Fintech Strategy and Management will be granted the CPFinT(M) certification, while RPs with a majority of work experience gained from Role 1 – Fintech Solution Development will be granted the CPFinT(S) certification. Moreover, the RPs who are granted the CPFinT(S) certification will also be designated a specialist stream depending on which specialist area they have acquired the majority of their work experience.
- 7.3 RPs who have sufficient work experience in two or more job roles can be granted both the CPFinT(M) certification and CPFinT(S) certification (e.g. 6 years in Role 2/Role 3 and 6 years in Role 1).
- 7.4 In general, the administrator of the ECF-Fintech will consider whether the nature of work experience is substantially the same as that described in the Fintech Roles in **Annex 1**. Relevant work experience may be obtained from AIs, financial regulators, and/or non-bank financial institutions. As for work experiences related to Fintech gained from other industries such as technology solution vendors, they will be considered on a case-by-case basis.
- 7.5 Existing RPs who meet the above criteria can submit their grandfathering applications to the HKIB, the administrator of the ECF-Fintech, from 1 April 2022 to 31 March 2023. A one-off grandfathering fee will apply.

- 7.6 For other individuals who have the relevant work experience but are not working in an AI during the grandfathering period, they may submit their applications to the HKIB for grandfathering within three months from the date of joining the Fintech function of an AI and becoming an RP. However, they should have met all the applicable grandfathering criteria on or before 31 March 2023 as prescribed above.
- 7.7 Applications for grandfathering are handled and assessed by the HKIB. The HKIB may request the applicant to provide employment records or additional information to substantiate the application for grandfathering. Late application will not be accepted.
- 7.8 Upon grandfathering, the RP is required to apply for CPFinT(A) or CPFinT(M) or CPFinT(S) and to renew the relevant certification annually with the HKIB.

8 Modular Exemption

- 8.1 An RP may be exempted from specified modules based on completion of eligible training programmes. Please note that the lists of eligible training programmes below are not meant to be exhaustive. Other training programmes covering syllabuses that have significant overlap with that of the ECF-Fintech can also be considered for modular exemption on a case-by-case basis. The detailed lists of eligible training programmes for modular exemption are as follows:²

(a) Module 1 - Technology Essentials (Core Level)

An RP who has passed any of the following training/professional programme(s) is eligible to apply for exemption on **Module 1** of the ECF-Fintech **Core Level** training programme:

Training Programme (University Degree)	Programme Provider
BEng Fintech	Chinese University of Hong Kong

² The modular exemption lists may be updated from time to time, and the most up-to-date lists are available at the HKMA's website (<https://www.hkma.gov.hk>).

MSc Fintech	Chinese University of Hong Kong
BSc Computational Finance and Financial Technology	City University of Hong Kong
Associate of Science (Financial Technology)	College of International Education, Hong Kong Baptist University
MSc Finance (Fintech and Financial Analytics)	Hong Kong Baptist University
BBA (Hon) Financial Technology and Innovation	Hong Kong Metropolitan University
BSc (Hon) Financial Technology and Artificial Intelligence	Hong Kong Polytechnic University
Doctor Financial Technology	Hong Kong Polytechnic University
BCom (Hon) in Financial Technology	Hong Kong Shue Yan University
MSc Fintech	Hong Kong University of Science and Technology
Advanced Diploma in FinTech	HKU SPACE
Executive Certificate in FinTech	HKU SPACE
Executive Certificate in Banking and Financial Technology	HKU SPACE
BASc Financial Technology	University of Hong Kong
MSc Fintech	University of Hong Kong
MSc Financial Technology and Data Analytics	University of Hong Kong

Training Programme (Online Courses)	Programme Provider
Harvard Fintech Online Short Course with Harvard VPAL Premier Certificate	Harvard University
FinTech: Finance Industry Transformation and Regulation Specialization of Coursera	Hong Kong University of Science and Technology
Fintech: Innovation and Transformation in Financial Services	National University of Singapore
The Future of Finance Professional Certificate of edX	University of Texas

Professional Programme	Programme Provider
Shenzhen-Hong Kong-Macau Fintech Professional Programme Level 1	Shenzhen Fintech Association, Chinese Financial Association

	of Hong Kong, and Macau Institute of Financial Services
Certificate in Finance and Technology Level 1	Institute of Financial Technologists of Asia

(b) Module 2 - Banking and Risk Essentials (Core Level)

An RP who has passed any of the following training programme(s) is eligible to apply for exemption on **Module 2** of the ECF-Fintech **Core Level** training programme:

Training Programme (University Degree)	Programme Provider
BCom (Hon) in Financial Technology	Hong Kong Shue Yan University
BBA (Hon) Financial Technology and Innovation	Hong Kong Metropolitan University

Training Programme (Advanced Diploma)	Programme Provider
Advanced Diploma for Certified Banker – "Fundamental of Banking", "Professional Ethics and Compliance", and "Risk Management"	The Hong Kong Institute of Bankers
Advanced Diploma for Certified Banker – "Fundamental of Banking", and ECF-Operational Risk Management / ECF-Compliance – "Module 2: Regulatory Framework and Compliance in the Banking Industry"	The Hong Kong Institute of Bankers

(c) Module 4 Fundamental Software Development (Core Level)

- i) An RP who has passed any of the following training programme(s) is eligible to apply for exemption on **Module 4** of the ECF-Fintech **Core Level** training programme:

Training Programme (University Degree)	Programme Provider
BEng Fintech	Chinese University of Hong Kong

MSc Fintech	Chinese University of Hong Kong
BSc Computational Finance and Financial Technology	City University of Hong Kong
Associate of Science (Financial Technology)	College of International Education, Hong Kong Baptist University
MSc Finance (Fintech and Financial Analytics)	Hong Kong Baptist University
BSc (Hon) Financial Technology and Artificial Intelligence	Hong Kong Polytechnic University
Doctor Financial Technology	Hong Kong Polytechnic University
BCom (Hon) in Financial Technology	Hong Kong Shue Yan University
MSc Fintech	Hong Kong University of Science and Technology
Advanced Diploma in FinTech	HKU SPACE
BASc Financial Technology	University of Hong Kong
MSc Fintech	University of Hong Kong
MSc Financial Technology and Data Analytics	University of Hong Kong

OR

ii) An RP who has completed at least one of the certifications in any one of the following specialist areas from key market players or service/platform providers is eligible to apply for exemption on **Module 4** of the ECF-Fintech **Core Level** training programme:

- Artificial Intelligence and Big Data Analytics: e.g. AWS Machine Learning – Specialty, Microsoft AI Engineer, AWS Data Analytics – Specialty, Microsoft Data Engineer, Microsoft Data scientist, Google Data Analytics, etc.
- Cloud Computing for Business Applications: e.g. AWS Certified Cloud Practitioner, GCP Associate Cloud Engineer, Alibaba Cloud Certified Associate-Cloud Computing, Microsoft Certified: Azure Fundamentals, etc.

- Blockchain and Distributed Ledger Technology: e.g. Blockchain Certification Course (from EC Council), P. G. Diploma in Blockchain Technology (from UpGrad), Certified Enterprise Blockchain Architect (CEBA), Blockchain Technology — EdX, Blockchain Fundamentals Certificate (from ISACA), etc.

9 Continuing Professional Development (CPD)

- 9.1 For both the Core Level and Professional Level qualifications, a minimum of 12 CPD hours is required for each calendar year (ending 31 December), of which at least 4 hours should be on topics related to innovative technology (e.g. artificial intelligence, big data, cloud computing, cybersecurity, distributed ledger technology, and/or open banking and API), product development, business strategy and marketing, finance and investment, and/or risk and compliance.
- 9.2 Any excess CPD hours accumulated within a particular year cannot be carried forward to the following year.
- 9.3 Activities that qualify for CPD include:
 - (a) Attending seminars or courses (both online and in-person) provided by AIs, financial services regulators, recognised professional bodies, academic and training institutions, and the HKIB;
 - (b) Taking professional examinations; and
 - (c) Delivering training and speeches.
- 9.4 CPD training topics should be related to banking and finance, Fintech, or the job function. Examples of appropriate training topics include:
 - (a) Compliance, code of conduct, professional ethics or risk management;
 - (b) Banking and financial knowledge;

(c) Emerging technologies in financial services (e.g. machine learning algorithms, deep learning, network analytics, visualisation, voice recognition, natural language processing and generation);

(d) Economics;

(e) Accounting;

(f) Legal principles;

(g) Business and people management;

(h) Language; and

(i) Information technology.

9.5 The annual CPD requirements are also applicable to RPs meeting the ECF-Fintech benchmark through the grandfathering route.

9.6 The CPD requirements will be waived for the first calendar year (ending 31 December) of certification and grandfathering.

9.7 RPs are required to self-declare their CPD compliance to the HKIB at the time of certification renewal. Documentary evidence should be kept for random audit by the HKIB.

9.8 The minimum CPD requirements will be subject to periodic review in light of the latest developments in the banking sector. For details, please refer to the HKIB's website (<https://www.hkib.org/>).

- 9.9 For the avoidance of doubt, RPs who are captured under multiple ECFs are only required to fulfil the CPD hours for one of their certifications per year (whichever is greater).

10 Maintenance of Relevant Records

- 10.1 AIs should keep proper training, examination and CPD records of RPs for monitoring purpose. AIs that are current employers of RPs are expected to keep and confirm relevant information of their relevant staff to facilitate the HKIB's processing of the applications for grandfathering and certification. Regarding information related to an RP's previous employment(s), the current employer of the RP is expected to confirm whether such information is consistent with its records (e.g. curriculum vitae provided by the RP at the time of job application).

11 Governance and Administration

- 11.1 The HKIB is the administrator of the ECF-Fintech and will be tasked with certifying the qualification required under the ECF-Fintech, ensuring that applicants are satisfactorily certified under the specified qualification requirements. The HKIB will also be administering the CPD requirements for ECF-Fintech certification holders. For details, please refer to the HKIB's website (<https://www.hkib.org/>).
- 11.2 The HKMA will, as part of its ongoing supervisory process, conduct regular surveys to monitor the progress of AIs' effort in implementing the ECF-Fintech as one of the benchmarks for enhancing relevant employees' competence level and on-going professional development.

12 Accreditation

- 12.1 The ECF accreditation mechanism is established for interested AIs or education/training institutes to have their learning programmes accredited as meeting the ECF standards (including but not limited to the QF Standards) of this ECF module.

12.2 The general criteria for ECF accreditation are as follows:

- (a) The learning programme meeting the required standards of individual ECF modules including programme objectives and learning outcomes, programme content and structure, and trainer qualifications and learning mode;
- (b) Accreditation of the learning programme at corresponding QF Levels; and
- (c) Endorsement by the ECF Steering Committee.

12.3 In order to satisfy criteria 12.2 (a) and (b) outlined above,

- (a) For self-accrediting institutions (e.g. institutions funded by the University Grants Committee, including their continuing education arms) / institutions with Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) Programme Area Accreditation (PAA) status in related programme areas, they are required to: (i) complete internal quality assurance processes for meeting the relevant ECF standards and the corresponding QF Level and (ii) be assessed by HKCAAVQ as fulfilling the ECF training objectives; and
- (b) For other institutions, they are required to complete the accreditation by HKCAAVQ to confirm that their learning programmes can meet the ECF training objectives and the corresponding QF Level.

12.4 HKCAAVQ will accept applications for ECF accreditation starting 4 January 2022.

12.5 Based on the relevant accreditation or assessment report submitted by the applicant, the ECF Steering Committee will confirm whether the training programme is or is not successful in qualifying as an ECF accredited programme. The route for ECF accreditation mechanism is illustrated at **Annex 5**.

Annex 1 – ECF-Fintech: Key Roles and Tasks for Relevant Practitioners

(a) Key Tasks of Different Job Roles:

Core Level	
Role 1 Fintech Solution Development	<i>Examples of functional titles:</i> <i>AI Developer, Data Scientist, Cloud Specialist</i>
	Key Tasks: 1. Keep abreast of latest Fintech developments including Fintech products, innovative tools and solutions, emerging technologies, and best practices 2. Analyse Fintech application use cases and business requirements, and formulate technical specifications for Fintech applications and solutions 3. Develop Proof-of-Concept and coordinate the evaluation process 4. Assist in technical design, development, integration and implementation of Fintech solutions and applications 5. Use some advanced and specialised skills in support of test plan, test cases/scripts, test environments, test data and perform testing 6. Work closely in a team environment and meet Fintech project schedules
Role 2 Fintech Product Design	<i>Examples of functional titles:</i> <i>Digital/Fintech Product Analyst, UI/UX Analyst</i>
	Key Tasks: 1. Design and develop Fintech products in response to the rapidly changing business environment and user needs 2. Use some advanced and specialised skills to analyse the needs and opportunities for new Fintech products to improve user experience 3. Propose Fintech product development strategies and participate in the product management cycle 4. Compile metrics to meet business needs and objectives 5. Collaborate with different business units to understand their priorities and elaborate requirements on features and functionalities for Fintech products 6. Exercise appropriate judgment in recommending applicable regulatory and business requirements for product compliance

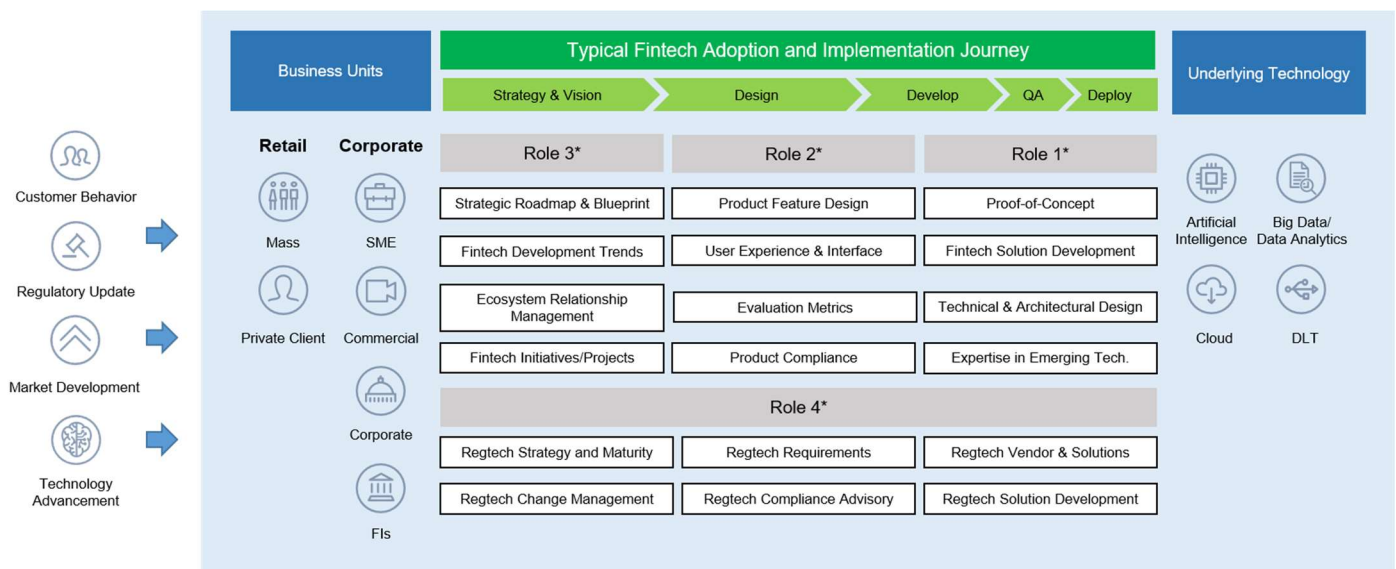
Role 3 Fintech Strategy and Management	Examples of functional titles: <i>Digital Transformation Analyst, Fintech/Digital Strategy Officer, Business Analyst (Innovation and Fintech)</i>
	Key Tasks: 1. Study the capabilities of emerging technologies and identify opportunities to improve banking operations and products by formulating and demonstrating use cases of technologies 2. Keep abreast of the latest Fintech regulatory requirements, industry initiatives, and best practices 3. Analyse and study business objectives and requirements on Fintech development 4. Follow up, monitor and support the AI's Fintech strategic initiatives and business/partnership development 5. Drive Fintech initiatives/projects and act as the key interface between external parties, business users, and technical teams in support of project co-ordination
Role 4 Regtech	General job description: <i>A group of emerging job roles from different functions (e.g. risk and compliance, technology and business functions) within an AI that are primarily involved in the use of technologies in the development and application of Regtech solutions to enhance the efficiency and effectiveness of risk management and regulatory compliance.</i>
	Key Tasks: 1. Observe the development around best practices for the use of Regtech 2. Assist in drafting and revising policies and guidelines taking into account regulatory requirements and technology development to ensure adherence to the best practices for Regtech application 3. Keep abreast of the capabilities of emerging technologies and identify opportunities and use cases for Regtech to transform risk management and regulatory compliance 4. Assist in performing gap analysis of Regtech maturity, taking into consideration the advancement in innovative technologies 5. Conduct Regtech vendor solution assessment and regulatory and business requirement conversion 6. Assist in the development of Regtech solutions/proof-of-concepts

Professional Level	
Role 1 Fintech Solution Development	Examples of functional titles: <i>Senior AI Engineer, Senior Cloud Specialist, Lead Data Scientist, Data Analytics Manager, Data Engineer</i>
	Key Tasks: 1. Take ownership of know-how on specific Fintech domain(s), techniques, models, and frameworks 2. Provide advice on the architecture design of Fintech projects across the AI 3. Guide the technical requirements and design of Fintech solutions for Fintech projects 4. Lead the development and implementation of in-house Fintech solutions for Fintech projects 5. Work closely with product team, risk team and end users to ensure technical compatibility, compliance with standards (such as internal coding standards and security standards), sound risk control and good customer experience 6. Ensure software development life cycle is in compliance with the information security and cyber resilience standards of the AI
Role 2 Fintech Product Design	Examples of functional titles: <i>Digital/Fintech Product Manager, Fintech Product Lead</i>
	Key Tasks: 1. Keep abreast of latest market trends, analyse customers' behavior, key financial drivers and competitors' strategy to maintain competitiveness in the market 2. Drive Fintech product development and enhancement to meet business objectives and user needs 3. Formulate Fintech product strategy and create key metrics to track outcome after product release 4. Work closely with different business units to prioritise Fintech product features and formulate product roadmap 5. Ensure the development of Fintech products is in compliance with the information security and cyber resilience standards of the AI 6. Provide risk control advice on applicable regulatory and business requirements

Role 3 Fintech Strategy and Management	Examples of functional titles: <i>Strategy Manager, Digital Transformation Manager, Fintech and Partnership Manager, Fintech/Digital Project Manager</i>
	Key Tasks: 1. Formulate strategic directions for the AI's future growth 2. Drive Fintech initiatives and lead a team to act as interface between cross-functional teams in Fintech implementation projects 3. Collaborate with development team and business units in the planning, design, development, and deployment of Fintech solutions across the AI 4. Lead cost-benefit and return on investment analyses for proposed solutions to assist senior management in making implementation decisions 5. Engage with the external Fintech ecosystem to explore potential collaborations and opportunities 6. Ensure the development of Fintech products is in compliance with the information security and cyber resilience standards of the AI
Role 4 Regtech	General job description: <i>A group of emerging job roles from different functions (e.g. risk and compliance, technology and business functions) within an AI that are primarily involved in leading and driving the design, development and implementation of Regtech solutions to ensure alignment with the AI's overall Regtech strategy and realisation of benefits of Regtech.</i>
	Key Tasks: 1. Define, implement and be accountable for the Regtech adoption life cycle (e.g. RegTech strategy and governance) 2. Lead the change management and transformation to accomplish the successful Regtech initiative delivery in areas including but not limited to data analytics, agile practices, vendor selection, and IT infrastructure integration. In particular, identify and collaborate with internal and external stakeholders to ensure successful implementation of Regtech solutions 3. Keep abreast of emerging technologies and best practices development in different application areas (e.g. technology-related risk management, conduct risk management, and customer protection) relevant to Regtech adoption of AIs

	4. Advise risk and compliance function on robust organisational risk management policies and guidelines and best professional practices in areas including but not limited to cyber risk, market and liquidity risk, credit risk and customer data and privacy 5. Advise on the potential Regtech application areas (e.g. maintaining obligation inventory, cross-border and local regulatory compliance, horizon scanning, and operational resilience) which could present opportunities to realise benefits for AIs' risk management and regulatory compliance
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(b) Illustrative Example of Fintech Innovations in AIs:



*Relevant Practitioners performing Roles 1, 2, 3, and/or 4 are within the scope of ECF-Fintech. The key tasks of different job roles listed above are for illustration purposes only. Please refer to Annex 1 (a) for the key tasks of different job roles.

Annex 2 – ECF-Fintech: Competency Framework

	Role 1 – Fintech Solution Development	Role 2 – Fintech Product Design	Role 3 – Fintech Strategy and Management	Role 4- Regtech
	Core Level			
Qualification and experience	- Passing Module 1 to Module 4 of the ECF-Fintech Core Level training programme; and - Having at least 1 year of relevant work experience in Fintech projects and/or any of the functions as specified in Annex 1			
Certification title	Associate Fintech Professional (CPFinT(A))			
Grandfathering (on a one-off basis)	- At least 3 years of relevant work experience in Fintech projects and/or any of the functions as specified in Annex 1; and - Employed by an AI at the time of application.			
CPD requirements	Minimum of 12 hours in each calendar year - Qualified CPD activities include: (a) Attending seminars or courses (both online and in-person) provided by AIs, financial services regulators, recognised professional bodies, academic and training institutions, and the HKIB; (b) Taking professional examinations; and (c) Delivering training and speeches. - At least 4 CPD hours must be earned from activities related to topics of innovative technology (e.g. artificial intelligence, big data, cloud computing, cybersecurity, distributed ledger technology, and/or open banking and API), product development, business strategy and marketing, finance and investment, and/or risk and compliance - If an RP possesses more than one ECF certification, he/she is only required to fulfil the CPD hours for one of his/her certifications per year (whichever is greater)			

	Role 1 – Fintech Solution Development	Role 2 – Fintech Product Design	Role 3 – Fintech Strategy and Management	Role 4- Regtech
	Professional Level			
Qualification and experience	• Management Track - This level of qualification can be met by completing Module 5, Module 9, and Module 10 of the ECF-Fintech Professional Level training programme on top of the Core Level qualification and having at least 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in Annex 1. • Specialist Track - This level of qualification can be met by completing Module 5 and one of the following modules for fulfilling the technical specialist stream of the Professional Level training programme on top of the Core Level qualification, and having at least 3 years of relevant work experience in Fintech projects and/or any of the Professional Level functions as specified in Annex 1: ▪ Module 6 for AI and Big Data stream ▪ Module 7 for Distributed Ledger Technology stream ▪ Module 8 for Open Banking and API stream ▪ Module 11 for Regtech stream			
Certification title	RPs may choose to pursue either the Management Track or one of the Specialist Tracks based on their current Fintech-related role and their preferred career development path: <u>Certified Fintech Professional (Management Track) (CPFinT(M))</u> OR <u>Certified Fintech Professional (Specialist Track) (CPFinT(S))</u> (a) Specialist Track - AI and Big Data Stream (CPFinT (S-AIBD)) (b) Specialist Track - Distributed Ledger Technology Stream (CPFinT (S-DLT)) (c) Specialist Track - Open Banking and API Stream (CPFinT (S-OBAPI)) (d) Specialist Track - Regtech Stream (CPFinT (S-RT))			

Grandfathering (on a one-off basis)	• Management Track - At least 6 years of relevant work experience in Fintech projects and/or any of the functions as specified in Annex 1, of which at least 3 years are gained from respective Professional Level job roles; and - Employed by an AI at the time of application. • Specialist Track - At least 6 years of relevant work experience in Fintech projects and/or any of the functions as specified in Annex 1, of which at least 3 years are gained from respective Professional Level job roles; and - Employed by an AI at the time of application.
CPD requirements	Minimum of 12 hours in each calendar year - Qualified CPD activities include: (a) Attending seminars or courses (both online and in-person) provided by AIs, financial services regulators, recognised professional bodies, academic and training institutions, and the HKIB; (b) Taking professional examinations; and (c) Delivering training and speeches. - At least 4 CPD hours must be earned from activities related to topics of innovative technology (e.g. artificial intelligence, big data, cloud computing, cybersecurity, distributed ledger technology, and/or open banking and API), product development, business strategy and marketing, finance and investment, and/or risk and compliance - If an RP possesses more than one ECF certification, he/she is only required to fulfil the CPD hours for one of his/her certifications per year (whichever is greater)

Annex 3 – ECF-Fintech: Learning Outcomes and Topics

I. Core Level

Programme Objective and Programme Intended Learning Outcome (PILO)

This programme is developed to nurture a broad and sustainable talent pool of entry level and junior level Fintech practitioners for the banking industry.

Learners will be equipped with professional knowledge and technical expertise to better respond to innovative financial and technological trends.

PILO a: Acquire the key aspects of Fintech application in banking and financial services.

PILO b: Demonstrate in-depth knowledge of the legal and regulatory framework for Fintech governing banking and financial services in Hong Kong.

PILO c: Acquire essential knowledge of the financial system, banking products and services.

PILO d: Integrate and apply Fintech skills and knowledge to tackle banking and financial services industry challenges and develop practical recommendations or solutions.

PILO e: Analyse latest digital developments in Hong Kong and overseas and identify new opportunities for Fintech innovation in banking products, services, and platform.

PILO f: Apply the essential principles and industry standards to support the design, development, and promotion of Fintech solutions.

Learning Topics and Module Intended Learning Outcome (MILO)

Module 1: Technology Essentials

MILO a: Analyse, evaluate and apply the fundamental technical concepts and principles of emerging Fintech topics to assist in Fintech solution development.

MILO b: Identify the recent and emerging Fintech trends and developments and common Fintech applications in banks.

1.1 Introduction to Financial Technology (Fintech) and Regtech

1.2 Fintech Trends and Developments

1.3 Common Fintech Applications in Banks

Module 2: Banking and Risk Essentials

MILO a: Differentiate between different banking product offerings and study the differences between retail banking, commercial banking, corporate banking, and institutional banking.

MILO b: Recognise expectations for competency of local Fintech talent and stay up-to-date on banking Fintech developments and adopt local and international Fintech regulations and government initiatives.

2.1 Retail and Commercial Banking (Fintech-related applications)

2.2 Corporate and Institutional Banking

2.3 Contemporary Banking Trends

2.4 Risk Management and Regulatory Compliance

Module 3: Fintech Practicum

MILO a: Conduct business analytics, milestone monitoring, and stakeholder communication for Fintech projects.

MILO b: Apply the essential principles and industry standards of Fintech product design and development cycle fundamentals, including methodology selection and criteria evaluation.

3.1 Business Analysis for Fintech Projects

3.2 Fintech Product Design and Development

3.3 Fintech Project Management and Reporting

Module 4: Fundamental Fintech Tools and Applications

MILO a: Understand the fundamental concepts of financial technologies (i.e. artificial intelligence, data analytics, cloud computing and blockchain technologies) for Fintech applications in the banking industry.

MILO b: Apply appropriate tools, frameworks, programming techniques and services of financial technologies in various use cases in the banking industry.

4.1 Tools and Applications for Artificial Intelligence and Big Data Analytics

4.2 Tools and Applications for Cloud Computing

4.3 Tools and applications for Blockchain and Distributed Ledger Technology

II. Professional Level (Management Track)

Programme Objective and Programme Intended Learning Outcome (PILO)

This programme is developed to nurture a sustainable talent pool of middle or senior level Fintech practitioners for the banking industry.

Learners will acquire a more in-depth understanding of the Fintech development trends, regulatory updates, and technology advancement to develop capabilities and formulate insights to drive and manage Fintech transformation within the organisation.

PILO a: Keep abreast of the key aspects of Fintech application in banking and financial services.

PILO b: Analyse the competitive landscape and the applications of the latest technology, and formulate Fintech growth strategies.

PILO c: Articulate banking product vision and business requirements clearly with business stakeholders and Fintech professionals.

PILO d: Manage scope, resources, and quality of Fintech projects.

PILO e: Identify major constraints and challenges for technology adoption and product/solution development.

PILO f: Track and monitor the compliance of Fintech products with relevant banking and data privacy regulations.

Learning Topics and Module Intended Learning Outcome (MILO)

Module 5: Regulatory Trends and Data Ethics

MILO a: Identify the regional Fintech regulatory trends and developments, including cross-border policies and collaborations.

MILO b: Recognise and respond to implications of data ethics, integrity, and risks associated with Fintech application opportunities.

5.1 Regulatory Trends and Developments

5.2 Requirements on Personal Data and Privacy Protection

5.3 Data Ethics and Data Quality

Module 9: Business Strategy and Marketing

MILO a: Drive Fintech adoption through effective means of value proposition, strategic banking roadmap of Fintech implementation, and knowledge of the future Fintech landscape.

MILO b: Manage the development of business case for initiating a Fintech project, resourcing, research, and analysis, including modelling techniques to evaluate the impact of Fintech.

9.1 The Future of Banking

9.2 Fintech and Innovation Strategies

9.3 Marketing and Value Proposition

9.4 Innovation for Fintech Adoption

Module 10: Fintech Product Management

MILO a: Lead the banking product team to address business problems through advanced project governance and assurance techniques, best practices for agile and innovative project methodologies, and state-of-the-art product development and solution delivery models.

MILO b: Apprehend and become adept in the behavioural economics behind customer-centric Fintech products and services in banks.

10.1 Advanced Fintech Applications and Customer Experience

10.2 Fintech Product and Solution Delivery

10.3 Project Governance and Assurance

10.4 Agile and Innovative Organisation

III. Professional Level (Specialist Track)

Programme Objective and Programme Intended Learning Outcome (PILO)

This programme is developed to nurture a sustainable talent pool of more experienced and specialised expert level Fintech practitioners for the banking industry.

Learners will achieve mastery within a specific Fintech domain on technology principles and applications in the banking industry to advise on Fintech use cases, solution architecture, and implementation management.

PILO a: Drive practical Fintech adoption in a range of applicable business contexts.

PILO b: Acquire in-depth knowledge and design rationale of Fintech solutions and applications in banks.

PILO c: Evaluate new technologies and vendors in the market, and supervise the application of technology concepts of relevant Fintech disciplines in solution design for addressing specific business scenarios and user pain points.

PILO d: Supervise and manage the design, development, and implementation of Fintech solutions.

PILO e: Review solution architecture and formulate implementation approach in Fintech projects.

PILO f: Establish and enforce standards on Fintech software engineering across different coding practices, design patterns, production processes, and system operations.

Learning Topics and Module Intended Learning Outcome (MILO)

Module 5: Regulatory Trends and Data Ethics

MILO a: Identify the regional Fintech regulatory trends and developments, including cross-border policies and collaborations.

MILO b: Recognise and respond to implications of data ethics, integrity, and risks associated with Fintech application opportunities.

5.1 Regulatory Trends and Developments

5.2 Requirements on Personal Data and Privacy Protection

5.3 Data Ethics and Data Quality

Module 6: Artificial Intelligence and Big Data

MILO a: Demonstrate proficiency in the advanced technical concepts, principles, and practical demonstrations of the emerging Artificial Intelligence and Big Data domains to execute problem framing and strategy analytics in conducting Fintech solution development.

MILO b: Interpret and leverage current and emerging Fintech use cases, project management techniques, and solution implementation, operation, and maintenance methodologies.

MILO c: Recognise the use and applications of Artificial Intelligence and Big Data leveraging cloud services related to data and model.

- 6.1 Technology Overview and Trends
- 6.2 Machine Learning Algorithms
- 6.3 Data Architecture and Design
- 6.4 Analytics Tools, Techniques and Cloud Technologies
- 6.5 Intelligent Systems Design
- 6.6 Applications in Banks and Problem Framing
- 6.7 Data Preparation, Analysis and Interpretation
- 6.8 Implementation of Artificial Intelligence and Big Data Solutions
- 6.9 Operation and Maintenance
- 6.10 Artificial Intelligence and Big Data Project Management

Module 7: Distributed Ledger Technology (DLT)

MILO a: Demonstrate proficiency in the advanced technical concepts, principles, and practical demonstrations of the emerging DLT domains to execute problem framing and strategy analytics in conducting Fintech solution development.

MILO b: Interpret and leverage current and emerging Fintech use cases, project management techniques, and solution implementation, operation, and maintenance methodologies.

- 7.1 Technology Overview and Trends
- 7.2 DLT Architecture and Design
- 7.3 Digital Tokens and Smart Contracts
- 7.4 Applications in Banks
- 7.5 Problem Framing and Solution Analysis
- 7.6 DLT Solutions Implementation
- 7.7 DLT Project Management
- 7.8 DLT Operation and Maintenance
- 7.9 DLT Security and Oversight

Module 8: Open Banking and Application Programming Interface (API)

MILO a: Demonstrate proficiency in the advanced technical concepts, principles, and practical demonstrations of the emerging API domains to execute problem framing and strategy analytics in conducting framework and gateway management, API programming, and Fintech solution development.

MILO b: Interpret and leverage current and emerging Fintech use cases, project management techniques, and solution implementation, operation, and maintenance methodologies.

8.1 Technology Overview

8.2 API Architecture and Design

8.3 Applications in Banks

8.4 Problem Framing and Solution Analysis

8.5 API Solutions Implementation

8.6 API Project Management

8.7 API Operation and Maintenance

8.8 API Security and Oversight

Module 11: Regtech

MILO a: Develop robust knowledge of Regtech best practices, Regtech solutions and their effective applications

MILO b: Apply business knowledge to identify, manage, and maintain the best practices on risk management and regulatory compliance.

MILO c: Develop a deep understanding of the development processes of Regtech solutions (i.e. development, validation, implementation and governance).

MILO d: Demonstrate proficiency in Regtech related technology concepts and principles to be able to select the appropriate technology solution provider and apply technology knowledge for business integration, risk management and regulatory compliance.

11.1 Regtech Trends, Government Initiatives, and Overview

11.2 Governance and Accountability

11.3 Regulatory Compliance Intelligence

11.4 Financial Crime Prevention

11.5 Conduct and Customer Protection

11.6 Regulatory and Tax Reporting

11.7 Risk Management

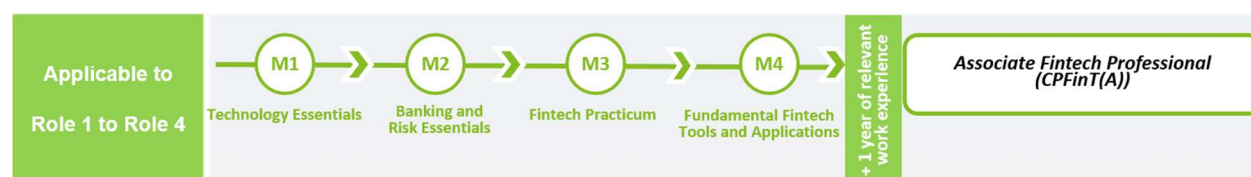
11.8 Applications in Banks

11.9 Change Management and Digital Transformation

11.10 Regtech and Data

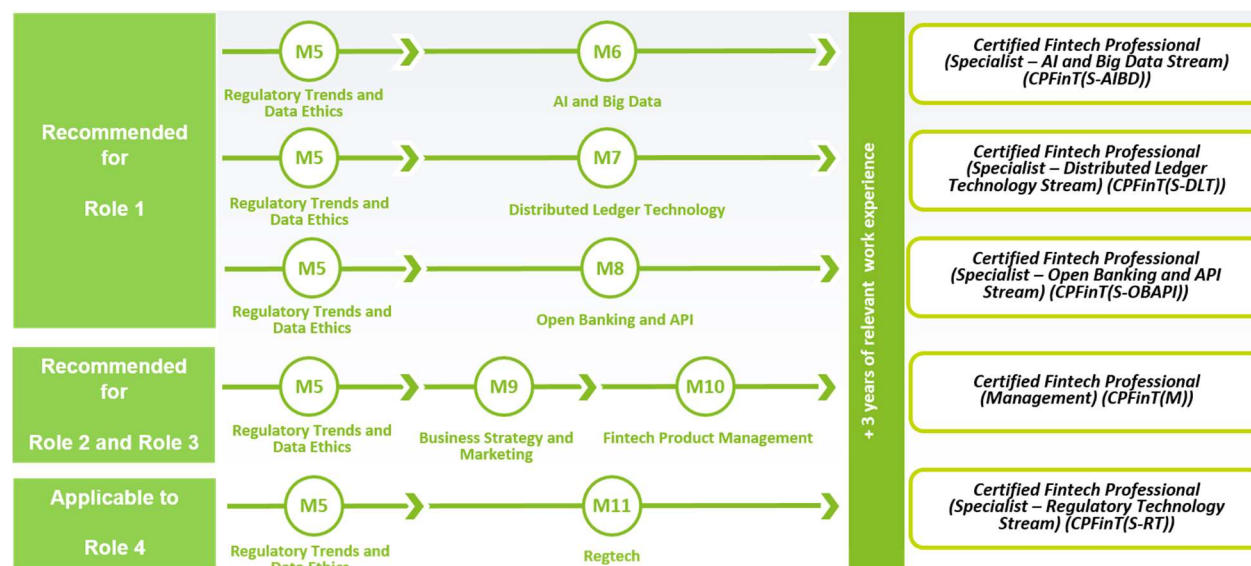
Annex 4 – ECF-Fintech: Certification Arrangement

Core Level:

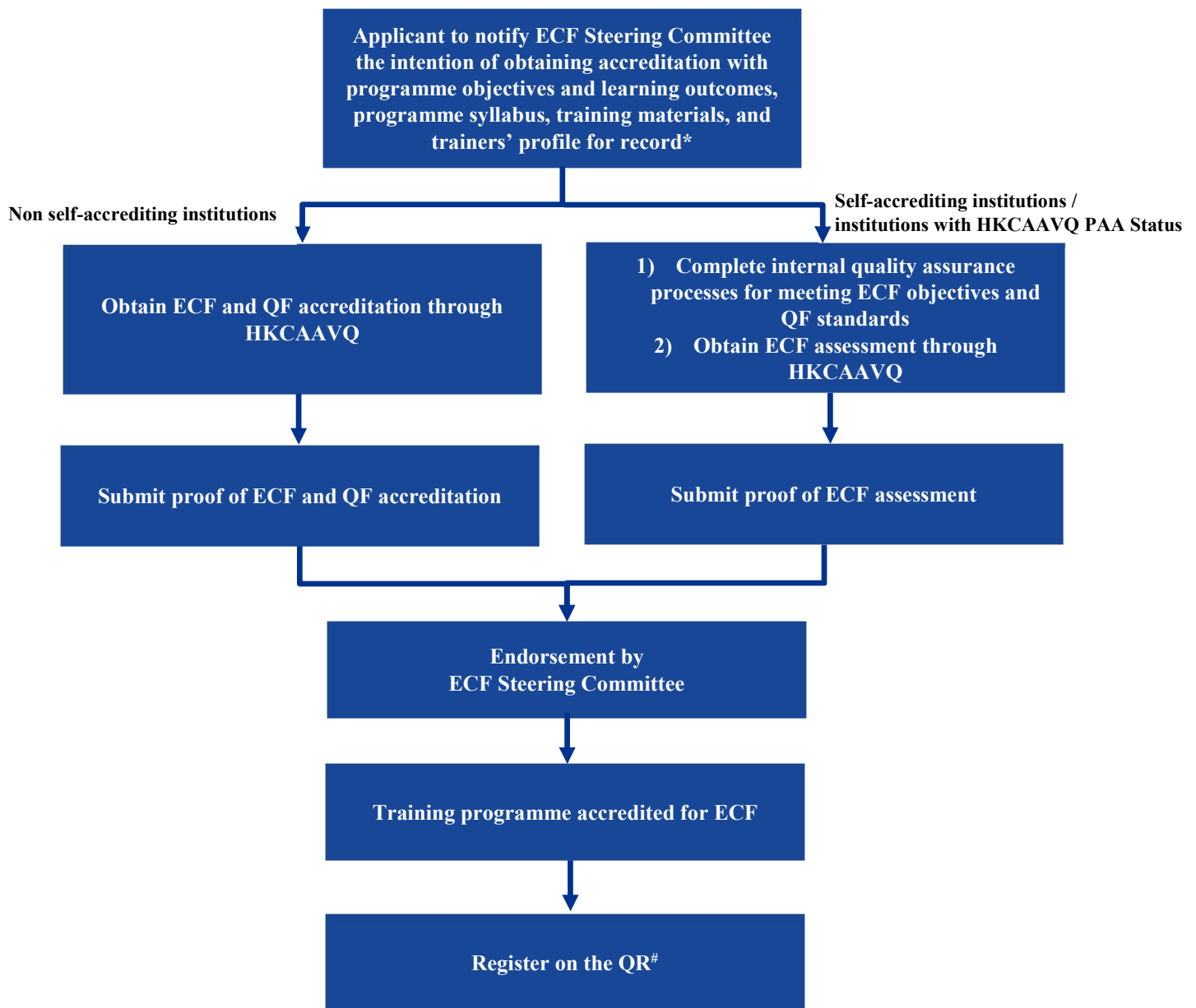


Professional Level:

RPs may choose to pursue either the Management Track or one of the Specialist Tracks based on their current Fintech-related role and their preferred career development path.



Annex 5 – Accreditation mechanism for the ECF-Fintech



* For the detailed application procedures, please visit the “ECF Accreditation Mechanism” sub-section under the “Enhanced Competency Framework” section on HKMA’s website (<https://www.hkma.gov.hk>)

Subject to re-accreditation/re-assessment by HKCAAVQ