



Funded by the Office for Students

## Workstream 1.1 - Accreditation Standard

### Purpose

As we approach the anniversary of the formation of the IoC Accreditation Panel, this document seeks:

- to collate the achievements of the workstream and the Accreditation Panel to date;
- to record the activities currently in progress, and outline the tasks needed for completion;
- to articulate possible future activities for the panel, from which a future strategy may be derived.

### 1. Achievements to date

#### a) Accreditation Panel

- formed in July 2019, initially as a proto-panel.
- To meet the remit of the Office for Students, the Panel, which has led on the prototyping of a degree accreditation standard, comprises a balance of employers, academics and professional body representatives.

#### b) Collaboration between academia, industry, BCS, the Chartered Institute for IT, and the SFIA Foundation.

- Representatives for all of these groups serve on the Accreditation Panel

#### c) An IoC Accreditation Standard for undergraduate degree programmes

- The standard is published on github,
  - <https://institute-of-coding.github.io/accreditation-standard/>
- The distinctive focus of the standard is on *competence* rather than just *knowledge*.
  - *The mapping of levels of competence to different dimensions of Bloom's hierarchies of learning have been presented at a range of conferences.*
  - *The assessment of competence should be based on evidence of (real-world) experience, collated in a portfolio.*
- The required level of competence is framed in terms of the SFIA Framework
  - *The competence requirement for the standard has been shown to be largely equivalent to the registration requirement for RITTech.*
- The standard does not specify a "core curriculum": any sensible combination of SFIA skills may be used to define the output of a degree
  - *This gives considerable flexibility to the range of degrees that could be accredited against the IoC standard.*
- The standard has been prototyped against a range of existing HE courses, both to ensure a candidate programme offers sufficient opportunities for students to develop real-world experience, and also that the required range of evidence can be collated by students on the programme.

**d) A specification for joint IoC / SFIA badges**

- Badges underpin the degree accreditation standard
- A key distinction is between badges for knowledge and badges for competence
  - *This distinction has been adopted and expanded by the SFIA Foundation*
- Badge designs and descriptions are available online
  - *There may be one or two outstanding licensing issues still to be resolved*

**e) A submission Proforma for prospective degree programmes**

- The proforma is based on the initial submission from Coventry.
- The proforma invites an HEI to state where, in a programme, the requirements of the standard are developed, with a particular emphasis on the provision of real-world experience.

**f) A baseline Portfolio mapping process**

- A criterion-based scoring approach allows the contents of a portfolio to be mapped to a SFIA skill, with the resulting score indicating whether competence has been demonstrated.
- The process is intended to serve as reference baseline for programmes seeking accreditation – it is not intended to be prescriptive.
- Prototyping the process against “real” student portfolios has raised awareness of the kinds of evidence that would be needed to achieve a competence badge.
  - *And also for RITTech registration!*

## 2. Work in progress

**a) Industrial endorsement**

- Notwithstanding the breadth of excellent input and advice from industrial members of the panel, the standard needs to be shared with a broader industrial audience if it is to be adopted successfully.
- There has been a suggestion of online seminars for industrialists, which might incorporate some or all of the questions developed for an online questionnaire.
  - *It was agreed that presenting the questions in an online seminar would be likely to elicit more useful responses than simply circulating the questionnaire on its own.*
  - *These could perhaps be run over the summer period, whilst bearing in mind that different sections of industry may be facing a range of challenges as a result of the CoVid-19 pandemic.*

**b) IoC curricula**

- Work is already in progress over the summer period to help those workstreams developing model curricula (data science and cybersecurity) to ensure that they conform to the IoC Accreditation standard
  - *Planned workshops could be supported by additional guidance for programme designers, on the public github site.*

**c) Accreditation process**

- The panel has identified the evidence needed to accredit a degree programme against the IoC standard.
- There is, as yet, no clarity on the actual process for reviewing that evidence and awarding accreditation
- Current efforts are directed towards IoC accreditation becoming part of, or an extension to, BCS accreditation.
  - BCS has announced an imminent review of degree accreditation

- This provides IoC with an opportunity to contribute a novel set of criteria focussing on competence
      - *Which are completely in keeping with the declared aims of CC2020*
    - However, it seems unlikely that IoC accreditation would be appropriate for all computing degree programmes.
  - Should it not be possible to integrate IoC accreditation into BCS processes, a free-standing process and supporting structure would need to be developed.
    - It is possible that such a structure may be needed in the medium term in any case, both to finish prototyping the standard and process, and also to demonstrate its feasibility and attractiveness.
- d) Long-term alignment**
  - Initial mappings suggest that the IoC standard is essentially equivalent to the educational component of CITP plus RITTech
  - This alignment needs to be formalised and recognised
    - *Probably as part of the accreditation review*
- e) Exemplar programmes**
  - An appropriate concrete outcome for the workstream would be to invite IoC partners to submit programmes for accreditation
    - *Perhaps some of those who participated in earlier stages of the prototyping might be willing to go through the whole process?*
- f) Portfolio mapping – responsibility characteristics**
  - Although the panel has agreed a “benchmark” mapping process for evidence of technical achievement, there are still some details to be resolved for mapping evidence of the generic responsibility characteristics
    - *Required for both “competence” and RITTech registration*

### 3. Trivial extensions – how much would be involved?

- a) Master’s standard**
  - A standard for a Master’s degree was defined in parallel with that for a bachelor’s, but has not been prototyped
  - Academic partners should be invited to present initial submissions – using the proforma (amended for Master’s) – in order to test the Master’s standard
- b) Standards for other qualifications**
  - It would be straightforward to re-instantiate the approved standard for a qualification at sub-degree level, such as a Foundation Degree or HNC.
  - Market research would be needed to determine whether such instantiations would be attractive to students, providers and employers.
- c) Standalone badges**
  - As currently envisaged, the accreditation process will assess the capability of HEIs to award the badges required for an IoC degree.
    - *This represents a departure from current accreditation practices, in which a particular programme is accredited, rather than an institution – it raises the level of abstraction.*
  - Once an HEI has demonstrated that they have the capability to award, to a consistent standard (particularly competence badges), it should be permissible for them to award badges outwith the context of a particular IoC degree.

- This opens the door to the award of IoC/SFIA badges for, e.g., components of non-computing degrees, or for CPD.

**d) Alignment with advanced RITTech**

- BCS has recently announced the idea of an Advanced RITTech, aligned to Level 4 in SFIA.
- This would seem an obvious target alongside the IoC Master's standard

**e) Generalisation of e-portfolios**

#### 4. Longer term developments

**a) Integration with micro-credentials and FMF**

- Demonstration of knowledge to underpin a SFIA Skill at Level 3 may not be trivial
  - *It could represent something like the outcome from a quarter of a degree...*
- There seems to be growing interest in micro credentials, gained from MOOCs, hackathons, training courses and so on.
- Harnessing the Flexible Modular Framework (Theme 3) could allow an alternative way for learners to accumulate the knowledge for an IoC/SFIA Knowledge badge.
  - *It is not clear whether a similar framework would a sensible replacement for a portfolio for evidence of experience.*
- Such badges could be at any level supported by the IoC scheme.

**b) Sustainability model**

- As noted above, the stated goal is to fold IoC accreditation into the future BCS scheme.
- Given that any revised BCS scheme will not be in place for some two years, this leaves the question of the interim period and the transition should be managed.

**c) Disseminate understanding of “competency”**

- different views
  - RSS, ACM, SFIA, ISO....
- publish deliverable 1.1.1