

HECOS MANAGEMENT GUIDE

v.1.0.0

The following document is a Management Guide for the Higher Education Classification of Subjects (HECoS) and its associated Common Aggregation Hierarchy (CAH).

For comments and questions relating to this Management Guide, please contact hecoss@hesa.ac.uk

CONTENTS

Summary	3
HECoS governing body	3
Voluntary Compliance with the UK Code of Practice for Statistics	4
Trustworthiness	4
Quality	4
Value	5
HECoS Artefacts.....	5
HECoS Management Guide.....	6
HECoS Implementation Guide	6
HECoS Coding Frame.....	6
The Common Aggregation Hierarchy (CAH).....	6
High level management process – for HECoS and CAH.....	6
Identifying potential change.....	8
Log change request	8
Evaluate change request.....	8
Definitions for the type of change.....	8
DLSG initiation of major substantive activity	10
Document proposal.....	10
Impact assessment.....	10
Principles for making decisions about the Higher Education Classification of Subjects	11
Coverage and scope	11
Statistical properties	12
Data quality and availability.....	12
Implementation plan	13
Roadmap	13
Publish proposal/announce change.....	13
Stakeholders feedback (substantive).....	14
Review feedback (substantive only)	14
Update document proposal (substantive)	14
DLSG approval (substantive).....	14
Implement change	14
Inform.....	15
Close.....	15
Commissioned reviews	15
References	16



SUMMARY

HECoS was created under HEDIIP as a sector standard for the classification of subject information that is intended to be used by all data collectors. This was established as a replacement for the JACS system in order to meet the needs of a broader group of stakeholders and to reflect the diverse and dynamic nature of Higher Education in the twenty-first century. HECoS is comprised of a vocabulary of subjects and their descriptions, with an associated Common Aggregation Hierarchy (CAH) designed to provide standard analytical groupings. The standard has the flexibility to allow other aggregations and specialist vocabularies to be adopted. Any adoption would be covered by this management process. Material describing HECoS can be found on the HESA website¹.

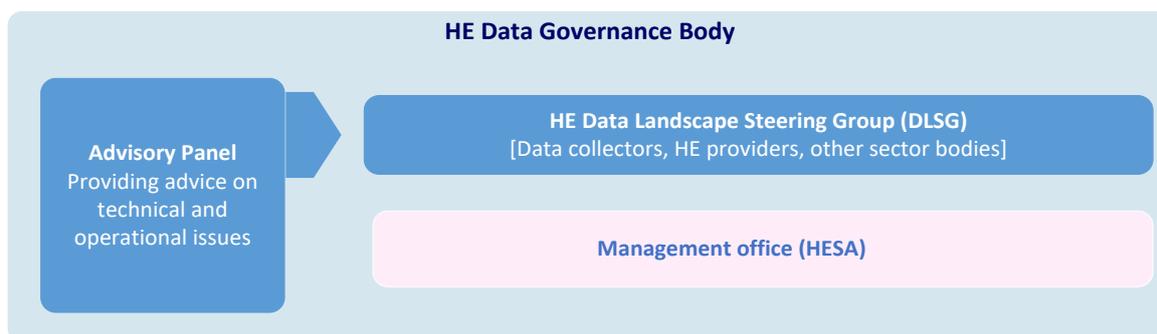
HECOS GOVERNING BODY

The HE Data Landscape Steering Group (DLSG) has been confirmed as the Governance Body for HECoS and the Group agreed their responsibility at their first meeting in November 2016.

HESA has subsumed the role and responsibilities of the HE Data and Information Landscape 'Management Office' and will be therefore be responsible for overseeing the relevant processes and procedures relating to HECoS.

The Advisory Panel will perform the role of the HECoS Consultative Group on a standing basis. There may on occasion also be a need to convene a technical expert's panel with members from outside the DLSG and Advisory Panel. Where this is considered necessary then the Management Office will convene this for the duration it is considered necessary.

The diagram below illustrates the Data Governance model that will support all standards, policies and processes within the remit of the DLSG



The Data Landscape Steering Group (DLSG) provides strategic direction for the HE data landscape and act as the single definitive authority for substantive changes. The Advisory Panel is an essential source of advice and guidance, responsible for bringing professional practice to bear on the management of HECoS, and supporting and advising both the DLSG and the

¹ See: <https://www.hesa.ac.uk/innovation/hecos>

Management Office in the management of HECoS and CAH. The Management Office, a team based at HESA, are the authority for decisions about administrative changes.

VOLUNTARY COMPLIANCE WITH THE UK CODE OF PRACTICE FOR STATISTICS

HECoS and CAH are not in themselves statistics, but the management of a robust set of definitions of subjects and subject groupings forms an important part of the data infrastructure underpinning data about the UK's HE sector. This includes Official and National Statistics uses, data presented to legislative authorities, major market uses including league tables, and data used in statutory, regulatory and funding exercises. "Statistics have to be based on the right data sources, with transparent judgements about definitions and methods, and judgements about the strengths and limitations of the statistics. Producers should demonstrate how they assure themselves that their statistics are robust and reliable."² By complying with and implementing the Code of Practice voluntarily, we intend to support users of the HECoS standard to meet their obligations under the Code of Practice³

This guide ensures that HE subject data compliant with the HECoS/CAH standard can be depended upon as trustworthy, high quality, and offering the value that stakeholders expect. We believe this guide supports the three pillars of the Code (Trustworthiness, Quality, and Value) in the following ways (please see the Code to cross-reference the full wording of the principles and practices referred to in parentheses):

Trustworthiness

This guide enables the people making decisions about the HECoS standard to be held to account for adherence to the practices and principles required by it. It specifies the requirements for transparent management of the process (T4) and codifies the principles for independent decision-making (T2) by which honesty and integrity can be demonstrated in practice (T1). The guide expresses how the standard will be managed and how implementation of changes to the standard will be applied and version-controlled (T6), supporting the orderly release of statistics dependant upon the standard (T3).

Quality

The function of this guide is to support the curation of an appropriate metadata source that supports high-quality public and regulatory information about HE based on the best available and most widely-recognised standard for HE subjects (Q2).

The guide has been developed using practice drawn from the Data Management Association's Data Management Body of Knowledge and benefits from the professional oversight of the Data Landscape Steering Group for HE(Q2.1). This guide defines how the HECoS and CAH standards are defined, and how they relate to the previous standard, JACS3 (Q2.2). The guide permits transparency over use of the standard (Q2.3) and evaluation of its limitations (Q2.4). It specifies an appropriate method of change management (Q2.5) and supports collaboration by identifying

² (Office for Statistics Regulation & UK Statistics Authority, 2018, p. 4)

³ Find the Code of Practice for Statistics at <https://www.statisticsauthority.gov.uk/code-of-practice/>

the roles of the DLSG, Advisory Panel, and Management Office in determining the standard (Q2.6)

By specifying the conditions under which the HECoS and CAH standards are managed, it supports end-user judgements about:

- the appropriateness of the standard for its intended uses (Q1.1)
- the way change is managed over time and the impact of this on users (Q1.7), including their understanding of potential limitations of the standard (Q1.6) helping them to explain their reasons for selecting the standard (Q1.5) and how it meets their requirements (Q1.3)
- the coherence of the aggregations represented by the CAH (Q1.4)

The guide also supports the quality assurance of the standard's fitness for purpose, by specifying the purpose of the standard and our understanding of the intended users' needs in the principles (Q3.1). The guide specifies the decision making process in detail, and has been evaluated by the DLSG as being proportionate to the uses of the standard (Q3.2) permitting end users to understand the quality of the metadata in detail (Q3.3). The guide explains how changes are released and notified (Q3.4) and shows the approach to periodic and systematic reviews (Q3.5)

Value

HECoS and CAH have been developed to be more relevant to users (V1) than the previous national standard, JACS3. This guide defines a management approach that builds-in responsiveness and the possibility of incremental change (V1.1, V1.6, V4) in response to user feedback (V1.3, V1.5). We have successfully engaged administrative data suppliers responsible for implementing the standard, winning an industry award for our work in developing, implementing and awareness-raising on the standard (V1.2, V4.7)⁴.

We intend to make HECoS and CAH available as a standalone machine-readable open standard (it is currently available through the HESA Coding Manuals and on the HESA website) (V2.1, V4) and all detailed information about the standard is on the HESA website (V2.2, V2.4)⁵. This information is clear (V.3) and proportionate to the uses to which the standard is put (V5)

HECOS ARTEFACTS

The governance of HECoS and CAH relies upon common understanding and acceptance of an agreed approach to its management and implementation. This is achieved through the production and maintenance of artefacts. The DLSG is responsible for the maintenance and development of these artefacts. The Management Office will undertake an annual review of the management guide and implementation guide, with potential issues being handled through the change management process specified here. Where specific implementation hurdles faced by users are notified to the Management Office, these may be considered outside the annual review cycle. These artefacts are as follows:

⁴ HESA was a recipient of a WonkHE award for HECoS.

⁵ www.hesa.ac.uk/innovation/hecos/

HECoS Management Guide

This specifies the processes utilised for managing changes to the HECoS and CAH, to ensure it retains the level of coherence users require.

HECoS Implementation Guide

This specifies the behavioural expectations required of supply-side and demand-side users, in order to ensure semantic interoperability (shared meaning). This is required to enable common adoption of the HECoS and CAH.

HECoS Coding Frame

This is the list of HECoS terms, with their associated codes, descriptions and scope notes. It also includes enhancements in the form of translations to other related coding structures.

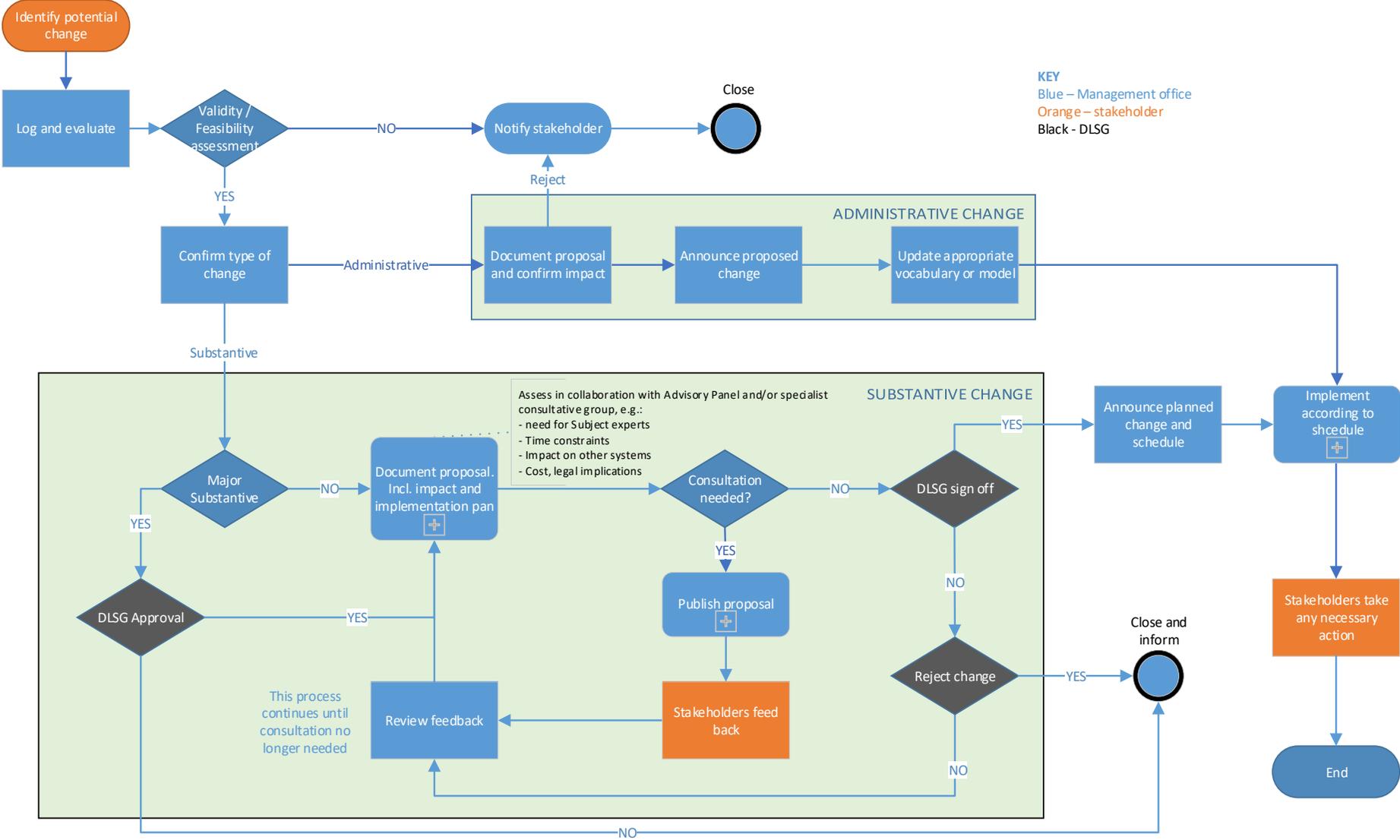
The Common Aggregation Hierarchy (CAH)

Provides standard groupings that provide consistent aggregation for analysis across a wide range of use-cases. The CAH can be applied to both HECoS and JACS subjects allowing for consistent analysis across both coding frames, providing continuity in subject analysis through the transition from JACS to HECoS.

HIGH LEVEL MANAGEMENT PROCESS – FOR HECOS AND CAH

The following diagram shows the decision-making flows to be exercised in the management of HECoS and CAH. It does not, however, cover the information provision that will necessarily exist around the process. Supporting infrastructure to systematise communications have not yet been put in place, and have been identified as a priority for the Management Office by DLSG. However, there is broad agreement that communications around the process should be rigorous and involve all stakeholders affected by the decision. The Management Office will be required to bear this in mind when operating the process.





KEY
 Blue – Management office
 Orange – stakeholder
 Black - DLSG

Identifying potential change

A change can originate from a number of sources and it is not expected that the Management Office would wish to limit where a change can be originated. The main sources of requests for change are expected to be:

- The Advisory Panel
- The Management Office
- The Data Landscape Steering Group to initiate more strategic work
- Data collectors either using, or intending to use the standard dataset
- Any subject matter expert in the subjects covered by HECoS and CAH
- Any other organisations that wish to adopt HECoS or the CAH

Each of these initiators would be expected to formally raise a change into the Management Office which would triage the request, and either place it into the correct governance process, request further information or reject the request.

A HECoS change request form will need to be completed by the stakeholder requesting the change. The form will be available from the HECoS page of the website and will be submitted to the HECoS mailbox hecos@hesa.ac.uk

A copy of the HECoS form can be found here: [Change request form \(DRAFT, not yet available\)](#)

Log change request

Once a change request form has been received an acknowledgment will be sent by the Management Office to the stakeholder requesting the change. The Management Office will be responsible for processing any received requests, ensuring to log them in the appropriate system and amend their status as appropriate. Upon receiving the request, the Management Office will expect to respond to the initiator within a published service standard framework. The Management Office intends to develop this set of service standards as it understands the requirements and expectations.

Evaluate change request

A regular (proposed monthly but may be required more or less frequently) meeting will be held by the Management Office to determine if the change request is feasible. If not, then the submitter will be notified of this and the reason for the change not being actioned. If the change is accepted then the type of change needs to be determined (administrative or substantive based on the definitions below), as well as deciding on the next steps to be taken and assigning the responsibility for the implementation of the change to a member of the Management Office. Where no decision can be made at it may be necessary to request further information from the submitter. In this case the change will remain in a pre-triage state until sufficient information is available. The change request will need to be updated on the appropriate system.

Definitions for the type of change

Changes to any HECoS artefact may be considered by this process. Changes can be as small as amending a typographical error on a scope note, or a major project to amend the CAH or



support a new national-level implementation of HECoS. Changes can also be made to the Management Guide and the Implementation Guide using this process.

When triaging the requested change to determine feasibility, the Management Office will make explicit reference to the Principles for making decisions about the Higher Education Classification of Subjects.

On determining that the change is feasible, the Management Office will further assess whether the proposal constitutes an *administrative* change, and can therefore be authorised and implemented by the Management Office. If the change request exceeds the specification of the administrative change process, it will be considered a *substantive* change, and routed appropriately.

The tests for whether a change is an *administrative* one are as follows:

- The proposal will not result in a new candidate term
- The proposal will not result in the deprecation of an obsolete term
- The proposal does not alter the Common Aggregation Hierarchy
- The proposal does not raise broader policy or practice issues
- The proposal can be resourced by the Management Office
- The proposal represents a minor correction or clarification
- The proposal will not affect the statistical usage of the coding frame.

If the answer to all of the above tests is either TRUE or NULL, then the proposed change is an administrative one. If the answer to any test is FALSE, then the change is substantive.

Examples of *substantive* changes include:

- A new candidate term
- A proposal to split an existing code into two new values
- The adoption of externally proposed aggregation hierarchy or specialist vocabulary
- A request to pro-actively review an entire subject area, affecting around 30 codes
- The deprecation of a term, aggregation hierarchy or specialist vocabulary
- Requirements for subject matter expert input
- Material impacts on key outputs
- Invalidation of previously-classified data
- Changes to the Management Guide or the Implementation Guide
- An administrative change which the Management Office judges raises broader issues of policy or practice requiring the attention of the Advisory Panel or DLSG.

If any of the above statements is TRUE, then the proposed change is *substantive*. If the proposed change is a substantive change, the Management Office will assess whether it is minor or major. The distinction between minor and major is the extent to which the DLSG would need



to commit additional resources in excess of the prevailing agreed resourcing for the Management Office, in order to pursue the proposal. A minor change may have far-reaching impact, but not require significant resources. A major change will require a resourced project plan sponsored by the DLSG to achieve the desired outcome.

The Advisory Panel are invited to discuss these categorisations and definitions.

DLSG INITIATION OF MAJOR SUBSTANTIVE ACTIVITY

When it is determined that the request is a major-substantive change, then this will be taken to DLSG (Data Landscape Steering Group) to approve further research and activity to take place. Typically this would include any planned major reviews of subject areas that requires significant consultation and orchestration. If further research is to take place, a scope would be agreed and the necessary resources secured. It is expected that the pre-planned and scheduled review activity which is recorded as part of the development roadmap, would fall under this category.

As part of the general management and oversight of HECoS, DLSG should be kept apprised on a regular (normally annual) basis about the lower-level changes taking place, and on any issues, which may precipitate a requirement for further research. In order to comply with the UK statistics code, the DLSG should seek general user feedback on the standard approximately every five years, and allow for a substantial re-appraisal of HECoS and CAH on a ten-year cycle. This does not preclude DLSG taking action out of cycle where it believes such action is necessary. There will be a post-implementation review of HECoS during the 2020/21 academic year.

DOCUMENT PROPOSAL

The change request will detail the change that is required and the actions that need to be taken such as an update to a HECoS terms definition. A member of the Management Office will be responsible for the implementation of the change. For any substantive change a proposal document will be created, and this will contain an impact assessment and an implementation plan.

When a substantive change is requested then it is anticipated that this will usually result in subject experts needing to be consulted with. As part of the change request form, information may have been submitted on communities/experts that could be consulted on this change. The Advisory Panel are the principal resource available for consulting on these changes, but their professional expertise may need to be supplemented with domain knowledge from the subject discipline in question. The information collected from subject experts/Advisory Panel will need to be included as part of the proposal. The change request will be updated to reflect any actions that will be/have been taken.

IMPACT ASSESSMENT

The assessment of the impact of change on the coding frame and its uses will be performed by the Management Office. This should take into consideration the anticipated cost and scale of the change against its understood benefits.



When assessing the impact of a change, we will consider two main facets: the impact on the HECoS coding frame itself, and also the impact on the Common Aggregation Hierarchy.

It is important to note that each principle is valid in its own right and there is no hierarchy within these. (i.e. stability does not override consistency by default). Where two or more principles are in conflict a justification will need to be made as to which principle is adhered to. This will be a case by case judgement.

PRINCIPLES FOR MAKING DECISIONS ABOUT THE HIGHER EDUCATION CLASSIFICATION OF SUBJECTS

Coverage and scope

C1 HECoS subjects are persistent areas or branches of knowledge or learning that are studied in higher education.⁶

C2 HECoS and CAH should take account of the context of the subject at the provider, ensuring that coding strikes the correct balance between the recognition of logical distinctions between subjects, and the intention to represent similar subjects together in aggregations and public information sources

C3 Changes to HECoS and CAH will conform to an evidence-based and robust process, recognising best practice in the production of statistical information. Details of the change process should be published for the benefit of providers and other users or interested parties.

C4 HECoS and its CAH is a UK-wide standard. It will be applicable to HE provision across the whole UK, and be understandable in a UK-wide context.

C5 HECoS subjects and terms must be defined with sufficient rigour for clear and auditable distinctions to be made about whether provision accurately reflects the subject code. The use of scope notes is encouraged where potential ambiguity is identified.

C6 The audience for much of the information represented using or mediated through HECoS and CAH may in the main be regarded as an interested and motivated lay-audience, including:

- prospective students and their advisers
- readers of the general press
- UK and international statistical users
- elected representatives of the people

The goal is to represent subjects and groups of subjects intelligibly and with rigour in these non-specialist contexts.

⁶ Developed using (Cambridge English Dictionary, 2018; Chambers, 2014; Collins English Dictionary, 2018; Oxford Dictionaries, 2018; various, 2017)

C7 HECoS and CAH will not be comprised of “administrative” subjects or groupings such as “subjects not elsewhere classified”, or codes which attempt to represent non-subject classes of information such as funding or regulation characteristics as if they were subjects. Organisations requiring specific implementations of HECoS that contravene this implementation guide should discuss their requirements with the Management Office in the first instance.

Statistical properties

S1 As far as possible, subject terms should attempt to delineate observed similarities in the subject characteristics of provision such as courses, qualifications or modules, between providers. Where a subject only occurs in a single circumstance (such as at a single provider) it is unlikely to be suitable for inclusion.

S2 Proposals for new or changed codes must demonstrate the existence of a gap, inconsistency, unhelpful ambiguity or overlap in the standard, and make a case that considers the positive and negative impacts of the change. Arbitrary or technocratic distinctions will be avoided except where these exceptionally demonstrate substantial value and enhanced meaning for the main audiences for HECoS- and CAH-mediated data.

S3 HECoS codes and CAH groupings should normally have longevity and a continuity of statistical properties observed over time. (Note: The higher the tier of the CAH, the more thorough and wide-ranging an assessment of impact should be. Changes to the level 1 CAH in particular will be subject to an impact assessment that comprises a very wide-ranging review and consideration.)

Data quality and availability

Q1 HECoS and CAH is the standard for classifying subjects in higher education for all data collections and transfers within the purview of the DLSG’s goals and code of practice.

Q2 The Management Office will be responsible for ensuring HECoS and CAH are made available online using a suitable open licensing arrangement.

Q3 Data coded as belonging to a subject must accurately represent the features of that subject as delineated in the HECoS subject term, definition, and scope notes.

Q4 HECoS and CAH is intended to be a stable standard, which supports longitudinal analyses. Adaptations to the standard must take this principle into account, and arguments for change is must be compelling and widely supported.

Q5 Where a HECoS code (or a node in the CAH) has not been used for three years, it will become a candidate for deprecation.

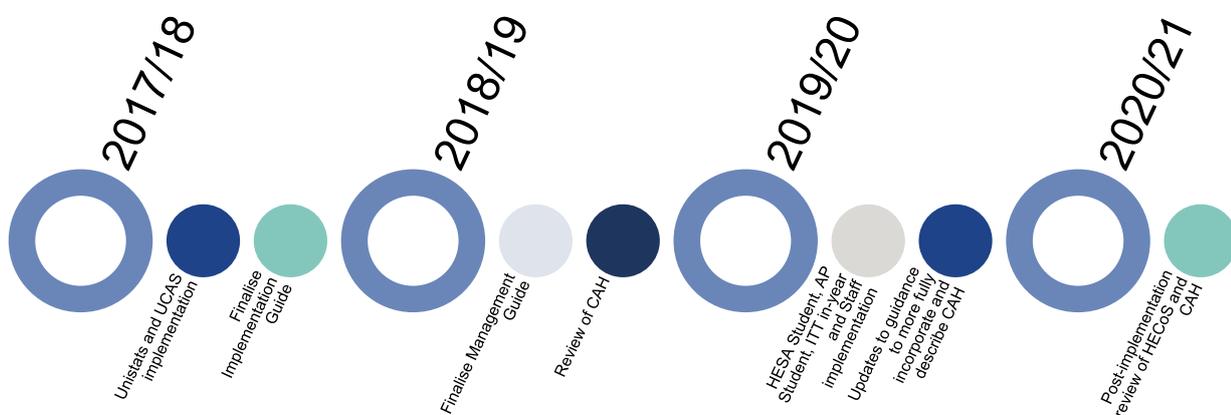
Q6 HECoS and CAH will be version-controlled separately.



IMPLEMENTATION PLAN

For any substantive change it will be necessary to propose an implementation to agree the feasibility of delivering the change. This should include a proposed release schedule. Where a programme of work or multiple stages of development are proposed, a roadmap giving indicative timescales and priorities will be produced.

ROADMAP



Forthcoming work in the management of HECoS, includes:

- 1) Improving the information about and definition of the CAH in the Implementation and Management Guides for HECoS
- 2) Improving the process for making proposals for change
- 3) Improve processes for managing requested changes and getting wider feedback on them

PUBLISH PROPOSAL/ANNOUNCE CHANGE

All changes will be notified publicly, and change proposals will be consulted on in a manner that complies with the UK Statistics Code. As an example, the proposed change(s) will be published on the HECoS website/HECoS hub. This is currently at <https://hesa.ac.uk/innovation/hecos> but may be changed administratively by the Management Office in future. An email will also be sent to the HECoS JISCMail group and to mailing lists of users held by relevant DLSC member organisations to alert them of this. The stakeholder that requested the change will also be contacted to confirm the implementation of the change.

For administrative changes a guide for when the change will be implemented can be included as this type of change does not require feedback to be sought. It is suggested that when a number



of administrative change requests have been received that these are processed and announced together, to reduce the need for multiple communications.

All changes should have a transparent and published lead time and implementation schedule. It is assumed that for any changes that affect the HECoS codes or the CAH then a period of at least one year from announcement to implementation will be maintained in order to allow sufficient times for stakeholders to adapt. Consideration must also be given to the business cycles of organisations using HECoS for operational purposes, and any major data development projects relating to HECoS underway at the time.

STAKEHOLDERS FEEDBACK (SUBSTANTIVE)

Feedback needs to be sought from stakeholders on the proposed change; an email can be sent out on the HECoS JISCMail group to notify the sector. In addition it is suggested that all known users of HECoS/CAH are emailed about the proposed change. A minimum of four weeks should be allowed for feedback to be provided.

REVIEW FEEDBACK (SUBSTANTIVE ONLY)

Once the deadline for feedback has passed, then all received feedback will be reviewed and any subsequent actions/amendments made.

If there are no actions following feedback then the proposal will be presented to DLSG for approval.

UPDATE DOCUMENT PROPOSAL (SUBSTANTIVE)

The document proposal will need to be updated based on the feedback received. It will need to be decided if further consultation is required; if so then this will need to go back to the 'Publish Proposal' stage, for further feedback to be sought.

DLSG APPROVAL (SUBSTANTIVE)

The document proposal needs to be signed off by DLSG.

If sign off is not achieved, then the feedback from DLSG will be reviewed and necessary actions taken - this will need to go back to the 'Document Proposal' stage.

IMPLEMENT CHANGE

HECoS/CAH will be updated with the change and a new version released on the website.

A release schedule will be defined and managed by the Management Office and implemented changes will be allocated into a planned release. This is important to bring predictability to the updating of the standard, but also to allow consideration to impact on capacity of users to adapt to change.

The release schedule will be published through the development roadmap, and in general minor substantive changes that are raised and progressed will be scheduled into the most appropriate



release. This means that changes can be raised and processed at any time, but implementation into the standard itself will be controlled by the release schedule.

All HECoS artefacts will be version-controlled using a published version control methodology.

INFORM

Once the change has been implemented then the website can be updated so that the change is moved from the 'Planned changes to HECoS' section to 'Implemented changes to HECoS'. An email will be sent to the HECoS JISCMail group to notify them that a new version of HECoS has been released and details of the change.

DLSG will also be informed that the change they agreed has now been made.

CLOSE

The change request can be updated once implementation of the change is complete, then closed.

COMMISSIONED REVIEWS

Whilst it is expected that a large amount of change presented for consideration will be raised externally to the Management Office, it is likely that over time themes of change will become apparent or that areas of the standard will require a review to ensure continued fitness for purpose.

The initial ideas for these reviews can come from anywhere, however the Management Office would expect to triage these and usually initially present them to the Advisory panel for advice then the Management Office would prepare a proposal for DLSG to commit to the work being undertaken as a planned activity. This activity would be considered to be a Major-Substantive change for the purposes of governance.



REFERENCES

For completeness and rigour, we utilised the following dictionaries and encyclopedias in developing the definitional term found in the “Principles” section, above: “HECoS subjects are persistent areas or branches of knowledge or learning that are studied in higher education.”

- Cambridge English Dictionary. (2018). SUBJECT | meaning. *Cambridge English Dictionary* (Online). Cambridge, UK: Cambridge University Press. Retrieved from <https://dictionary.cambridge.org/dictionary/english/subject>
- Chambers. (2014). 'Subject' Chambers – Search Chambers. *Chambers 21st Century Dictionary* (online). London: Hodder and Stoughton. Retrieved from <https://chambers.co.uk/search/>
- Office for Statistics Regulation, & UK Statistics Authority. (2018, February). Code of Practice for Statistics. UK Statistics Authority. Retrieved from <https://www.statisticsauthority.gov.uk/code-of-practice/>
- Collins English Dictionary. (2018). Subject definition and meaning | Collins English Dictionary. *Collins English Dictionary* (online). Collins. Retrieved from <https://www.collinsdictionary.com/dictionary/english/subject>
- Oxford Dictionaries. (2018). subject | Definition of subject in English by Oxford Dictionaries. *Oxford Dictionaries | English* (online). Oxford: Oxford University Press. Retrieved from <https://en.oxforddictionaries.com/definition/subject>
- various. (2017). Hypokeimenon. In *Wikipedia*. Wikimedia Foundation. Retrieved from <https://en.wikipedia.org/w/index.php?title=Hypokeimenon&oldid=815042463>

