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information standards board
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Education, Skills and Children's Services Information Standards Board

2011-2012 Delivery Plan

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1 Introduction

1. The Information Standards Board (ISB) is jointly sponsored by the Department for Business, Innovation and Skills (BIS) and the Department for Education (DfE) as the system-wide authority for all information and data standards. Its mission is to facilitate secure information sharing across the system; develop and support information standards to aid front line delivery; improve efficiency, reduce costs and minimise bureaucracy. The ISB is designated as an Internal Advisory Committee, but has Ministerial authority to make recommendations and approve standards for use across education, skills and children's services (ESCS).

2. Our work to date has been realising the ISB's mission:

   - to create and maintain a minimum yet sufficient set of re-usable standards which support the secure sharing of data, enabling the implementation and evaluation of policy outcomes;
   - to enable the delivery of joined up services to citizens and employers; and
   - to achieve ESCS-wide efficiencies and best value for money, as embodied in the Information Strategy for ESCS.

3. The year ahead will be challenging as there is much to do with our finite resources. This high level Delivery Plan shows how we will focus our time and energy on approving those data and information standards that will make most impact. We will also continue to build on our achievements to date and, most importantly, ensure that the approved standards in place are adopted and implemented widely across ESCS.

4. ISB standards will help central government departments, executive agencies and the arm's length bodies to meet the requirements set out in the Government ICT Strategy. Common and open information standards are an essential building block for delivering the objectives of this Strategy.

2 Background

5. The ISB has been in existence for 3.5 years and at the start of each year it formulates a plan for the forthcoming year. This document is a draft plan for the year 2011-12 for ISB consideration and approval. It shows an overview picture of what has been accomplished and suggests prioritisation of the next year's work, based on:

   a. requests, formal and informal, for new standards;

   b. an initial analysis of priorities worked up at the March 2011 meeting of the Standards Implementation Working Group; and

c. the on-going impetus to support and encourage adoption of ISB standards.

6. The mission of the ISB is to:

   a. facilitate information sharing across the system;

   b. agree information standards to aid front-line delivery; and

   c. improve efficiency, reduce costs and minimise bureaucracy.

7. Full information about the ISB, its work and its standards are set out on the ISB website.

The ISB defines the following ***two types of ISB standard***:

1. **Business Data Standard (BDS):** this defines core business information, devoid of encoding method or application-specifics. The BDS is the means by which we aim to ensure that an item of data has common characteristics, making it understandable and shareable across all Application Interfaces. It defines data in terms of data types (e.g. “text”, “numeric”, “date”, etc.), semantics (a definition of the meaning of the data item e.g. a BDS may state “this text data item defines a single name component of a person”) and length (e.g. name components may be up to 100 characters in length). A BDS also groups data items into “entities”, each of which corresponds to a business entity of interest, like “person”, “organisation”, address”, etc. Finally the BDS defines how one instance of an entity can be uniquely distinguished from another (for example how to distinguish one Qualification record from that relating to a different Qualification).
2. **Technical Data Standard (TDS):** an ISB TDS defines an encoding, in a defined encoding format such as XML, of a BDS. As such, it is ready to be “dropped into” an Application Interface Specification wherever that data item is needed.
   An explanation of how these standards fit into the real world of systems and applications is given in Annex C: The information landscape.

3 Progress – the big picture

8. The DfE Chief Information Officer Group has created an ESCS-wide Business Data Architecture (BDA) which models business information needed across all sectors of ESCS. This architecture was developed as a high level view. More detail is filled in and the architecture is evolved during the process of development of ISB standards, when the business activities and detailed information needs are explored in the area being standardised. In this way the ISB standards and the BDA are always compatible, but by co-evolution (there is no presumption that the business needs must be force-fitted into the high level architecture).

9. Relevant parts of the BDA are included in Business Data Standards and thus approved by the ISB. Eventually most if not all of the BDA will be developed and approved by the ISB for the whole of ESCS. The figure below shows the

top-level view of information areas from the Business Data Architecture and represents, at a high level, all the functional areas across ESCS where there are potential needs for data standards. Dark green has been used to show where standards have been created and approved by ISB and yellow shows where there are no standards:

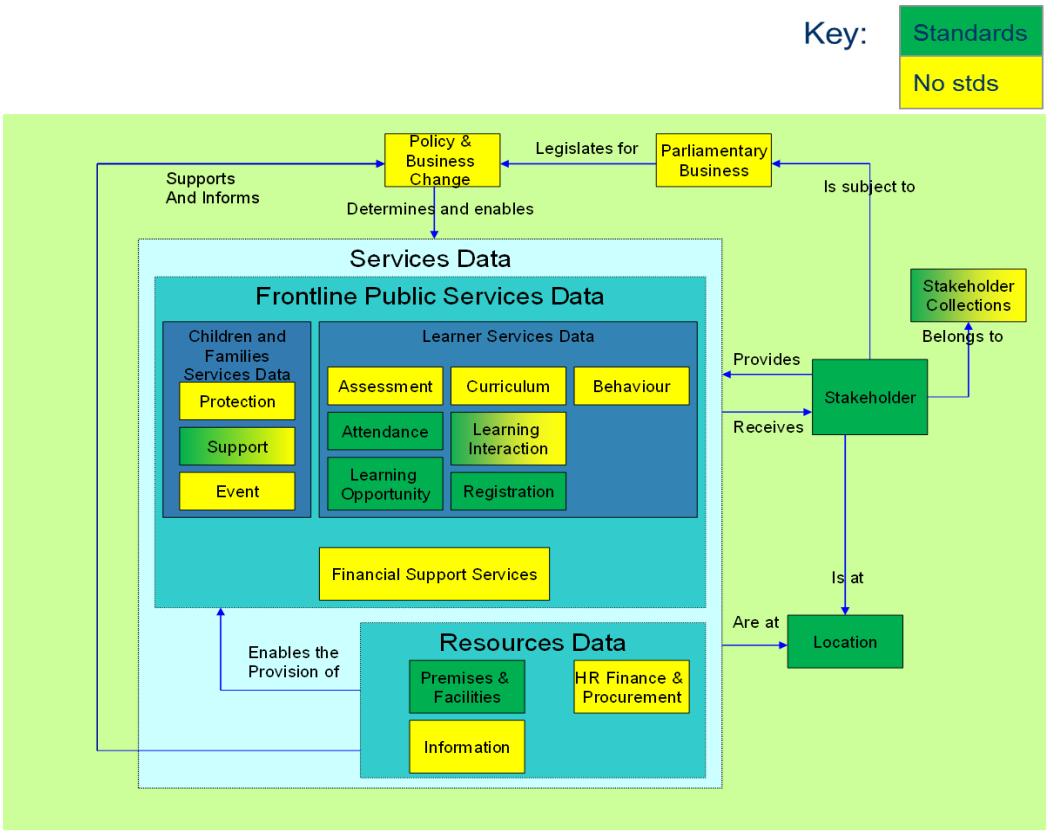


Figure 1: Progress: green shows where approved standards exist

10. ISB creates and publishes small modular Business Data Standards (BDS). In a few cases, an encoding of a BDS in XML has also been produced and this is called a Technical Data Standard (TDS). Some of the modular BDSs are of widespread use. For example '*Stakeholder*', which covers Person and Organisation, will be used across almost all the business functions in ESCS, and in the figure above '*Stakeholder*' is shown as outside the ESCS functional areas. Another area of the BDA, '*Location*', covers methods of contacting or locating stakeholders (e.g. address, email address, telephone numbers, etc.). This too is shown outside the ESCS functional areas because its use is common to most of them.

11. Some of the standards represent "foundations" on which other standards are built. For example, '*Stakeholder [person]*' has many related standards (e.g. names, contacts, disabilities, awards) linked to it.

12. Below is an expansion of detail of the green parts of the BDA showing just the foundation standards (showing all of the standards would make for a very crowded picture). This gives an indication of the scope and utility of the standards developed so far:

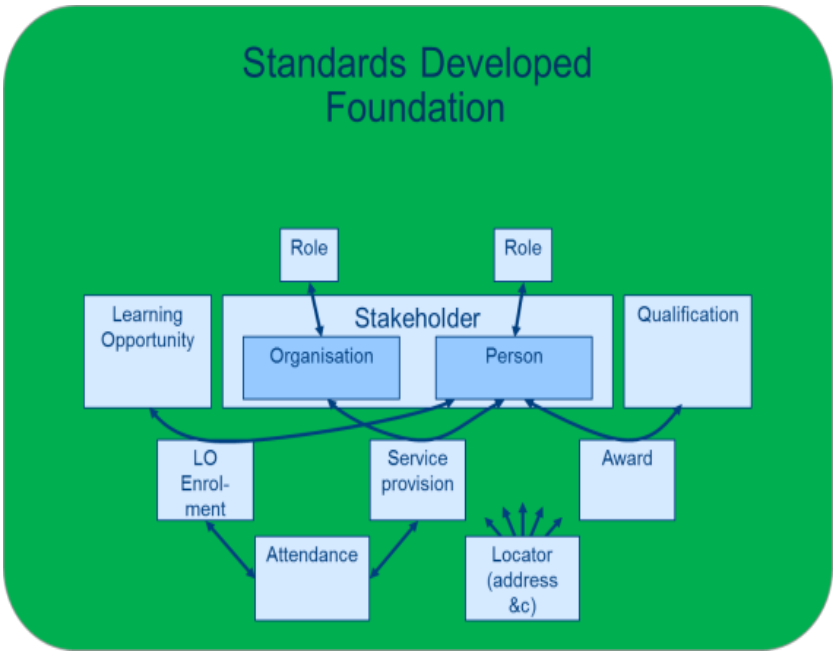


Figure 2: Approved standards in more detail showing the "foundation" standards underpinning many potential uses

13. Some of the future work items that have been identified (see the plan in Section "Proposed Plan:" below) will create new standards, but many will fill in more detail on the foundation standards (for example, extensions to Stakeholder [person] to hold additional information such as first language, mode of travel, etc.). The additional detail may be in the form of new data items within a standard (shown below as red shading), or new entities that can be linked (shown as red circles linked to the foundation standards):

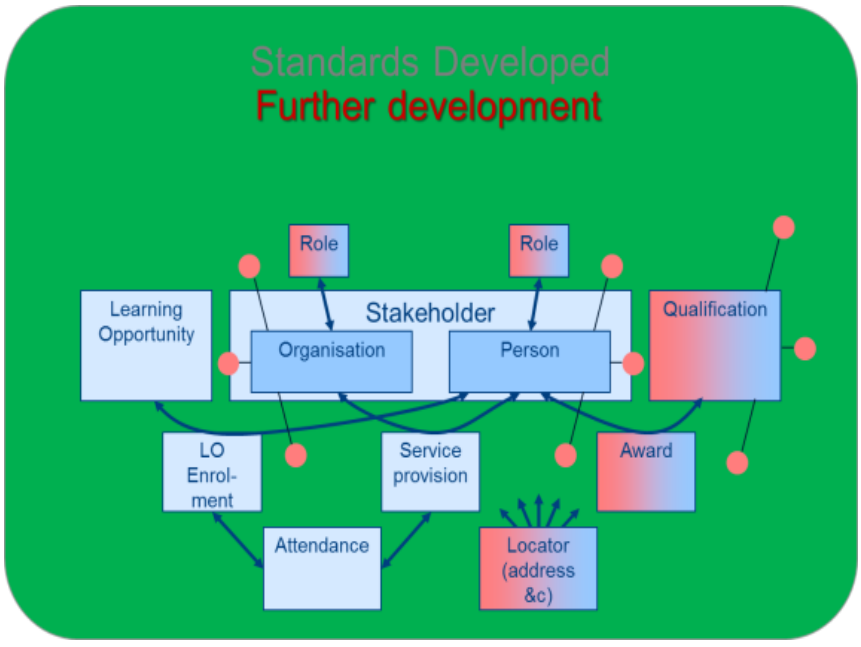


Figure 3: Some approved foundation standards will need extension (shown in red) to hold additional information

4 Delivery Plan

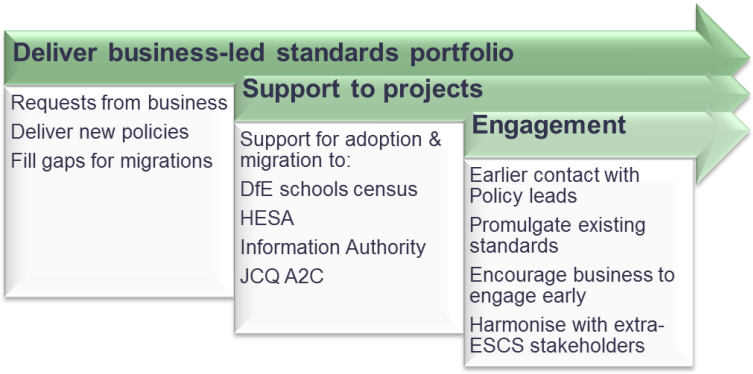
14. The delivery plan overview is summarised under three headings:

    - High Level Goals
    - System wide engagement with stakeholders
    - The delivery of a business led standards portfolio

15. We anticipate that the delivery plan will be updated on a quarterly basis to reflect emerging policy needs, system-wide change initiatives and new developments in standards.

4.1 High level goals

16. The high level goals are shown in the figure below:



4.2 Deliver a business led standards portfolio

17. The ISB aims to be driven by business priorities, for example, in support of policy initiatives or business change initiatives.

18. The standards included in the portfolio to be developed have been identified as priorities by ESCS stakeholders, principally via the ISB Special Interest Groups (SIGs) and the Standards Implementers' Working Group. They are consistent with the high level goals set for 2011-12, focusing the ISB's work on the standards that will bring the greatest and earliest benefits to the education, skills and children's services system.

19. Note that the plan as presented in Section 4.5 below may need to be revised over time to support emerging priority needs, such as the Arm's Length Body reform programmes.

4.3 Support to Projects

20. The goal of the ISB is to contribute to the delivery of benefits into ESCS. The ISB recognises that standards only deliver benefits when used, and their

usage is introduced through projects and programmes. Hence the ISB attaches importance to supporting projects in their use of standards.

21. The ISB plan includes the following project support activities:

    a. Engage with the Arm's Length Body reform programme in order to support integration of ALBs around common ISB standards. Within the DfE this will include the ISB becoming part of the programme approvals process to ensure that the DfE policy of mandating the use of standards is upheld. At the time of production of this plan, BIS has not determined the role of standards within its own ALB reforms;

    b. Work with DfE's Data and Statistics Division (DSD) on the migration of CBDS to ISB standards, particularly Address Standards needed by 2015; development of standards for the Academies Programme and for Young People/Early Years;

    c. Work with HESA, HEFCE and a range of strategic partners including UCAS and SLC to achieve the aims of the HE White Paper, including supporting the re-design of the UCAS application processes;

    d. Work with the Information Authority (The IA) and the Skills Funding Agency (SFA) as they move their Individualised Learner Record (ILR) collections towards compliance with ISB standards;

    e. Continue to work with the Joint Council for Qualifications (JCQ) on their new "A2C" system for entering learners for assessments and distributing results;

    f. Continue to support the Schools Performance Website project; and

    g. Engage early with the introduction of new measures for Sure Start early years provision and payment by results.

4.4 Engagement

22. The aims of stakeholder engagement are to:

    a. Ensure that stakeholders always make appropriate use of available standards because they are aware of the existence of ISB standards;

    b. Ensure that gaps in available standards are identified, so that they can be filled in time to meet business needs; and

    c. Ensure that appropriate and fully representative expertise is located and engaged in the development of ESCS standards.

23. Stakeholder engagement includes promotion to and working with stakeholders.

4.4.1 Promotion

24. Specific promotion activities will include:

    a. Setting up regular information sharing sessions for key policy officials in DfE and BIS;

    b. Identify the main data systems that can make an early transition to ISB standards and map them in a transition plan with a clear schedule and explanation of process covering 2012-2014;

    c. Work with DfE'S Chief Information Officer Group senior management team to promote ISB standards to the new Executive Agencies, starting with the Standards and Testing Agency due to be operational by November 2011;

    d. Engage with BIS' relevant bodies in the education and training sector (see Annex B), and work on common identifiers within the Standards Implementers' Working Group;

    e. Through close contact with Ofsted, Ofqual and the Office of the Children's Commissioner to introduce ISB standards at the earliest opportunity, for example when systems are due for refresh, or when plans are being developed for changes covering the next 2/3 years;

    f. Engage Teaching Agency and Teacher Pensions policy officials to identify opportunities to introduce ISB standards; and

    g. Build links with Department of Health on areas of common interest, including standards describing social workforce and standards that support social work.

4.4.2 Engagement Methods

25. A variety of methods will be used to engage with stakeholders as described below.

Communication Channels

26. **ISB SIGs and Standards Implementers' Working Group**; regular meetings and use of Huddle collaboration space will provide a channel for two-way communications.

27. **Suppliers SIG**; providing a two-way channel for communications, as well as a forum through which to reach supplier expertise for the development of standards.

28. **ISB's collaboration space**; users will be invited to join via a Special Interest Group or specific working groups set up to help take forward standards development and implementation.

29. **ISB's website** the content is being migrated from http://www.escs-isb.org.uk/ as part of the Government's rationalisation of websites.

30. **ISB's quarterly newsletters**: these will give regular updates on our work.

Enterprise Architecture

31. The ISB and TSS will continue to work closely with the DfE's Enterprise Architecture Unit who are developing an Enterprise Architecture on behalf of the whole of ESCS. This work is approved on behalf of ESCS as parts of it become embedded into approved ISB standards. Through this approach we will ensure that ISB standards and the new architecture are fully aligned. This alignment will ensure that adopting approved data and information standards will embed the new architecture across the system.

32. During this year we will progress the work on the ESCS Metadata Framework; continue to seek ISB approval for it and to work up a case for the ESCS Thesaurus to become an ISB standard. The Metadata Framework provides guidelines for the use, governance and management of metadata across the education, skills, and children's services (ESCS) system and has potential for adaptation and use (in conjunction with the e-Government Metadata Standard (e-GMS)) across Government. Its purpose is to provide the semantic foundation for a consistent approach to the creation, management and use of information objects, in order to support findability, compliance and interoperability. It is intended for use by all ESCS staff involved in the creation or management of content repositories, or in developing strategies and systems for exploitation of content.

Cross-Government Engagement

33. In 2008-09 the ISB agreed a 'ways of working framework' with its counterpart for Health and Social Care. The intention is to reduce duplication, increase re-use and improve interoperability. Standards in the areas of Child and Adolescent Mental Health and Religion have already been identified as areas for collaboration. Regular quarterly meetings between the two bodies will continue, and will be reported to the ISB.

34. The TSS will continue to engage at a cross Government level through the cross government enterprise architecture working group (XGEA). Specifically this engagement will monitor and contribute to the development of 'Universal' standards. Such standards are needed by every Government Department and will be defined centrally, focussing on standards like 'qualifications' and 'ethnicity' which have been identified as high priority by the ESCS businesses. Updates on progress will be reported to the Board as appropriate.

UK Nations and Eire

35. The ISB and TSS will continue to facilitate quarterly meetings with the devolved UK Nations and Eire with the objective of agreeing ways of working and identifying areas for collaboration. Reports will be made to subsequent ISB meetings.

Industry Groups

36. The ISB and TSS will continue to work closely with: the Systems Interoperability Framework Association (SIFA); the Suppliers Association for Learning, Technology and Interoperability in Schools (SALTIS); the Strategic Content Alliance (SCA); and Learning-Education-Training Systems Interoperability (LETSI).

37. A new Special Interest Group for suppliers will be established to continue engagement with Management Information Software (MIS), in-house and other suppliers.

38. Quarterly meetings with the Information Management Partnership for Schools (IMPS) supplier group will continue.

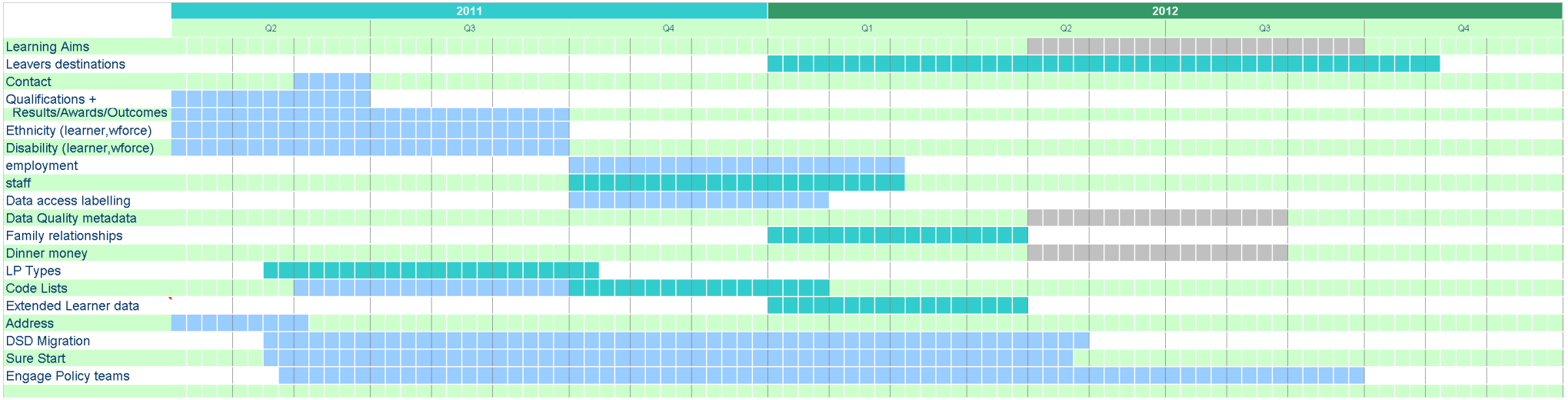
Standards Organisations

39. The TSS will continue to engage with standards making organisations like BSI, CEN, ISO and LeGSB. This engagement will come through the relevant British Standards working groups and through engagement on specific standards issues.

4.5 Proposed Plan

40. The plan below shows the new standards development, project support and stakeholder engagement activities scheduled to fit within the resources available. This shows the work extending through most of 2012, with work items scheduled according to priority (as identified at the last Standards Implementers' Working Group on 13 April 2011).

41. If these timescales do not meet emerging business needs, then some re-prioritisation may be needed or consideration must be given to expanding the resources available to deliver the work.



42. A description of each activity is provided below.

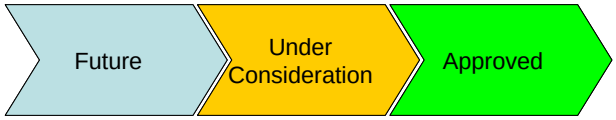
Activity	Description
Learning Aims	The Individual Learning Record collected by the *Information Authority* contains “Learning Aims”. In part these relate to qualifications, but they also relate to planned progression, such as “Learner wishes to get to University X”. This activity aims to analyse the information within Learning Aims and identify how to express them using existing ISB standards and/or where new standards are needed.
Leavers destinations	This has to do with where a Learner goes on to after completing a Learning Opportunity. Mostly this is covered by existing standards where the Learner goes on to more education or is employed within ESCS, however there are some situations (unemployed, voluntary work, etc.) that are not covered.
Contact	The association between a Stakeholder and an address/telephone number, etc. We have a standard, but the code list describing the recognised relationship types (home, work, vacation, etc.) is not defined.
Qualifications	These two items are the standards that will result from working with JCQ.
Results/Awards/Outcomes	
Ethnicity (learner,wforce)	Approved work item, in progress
Disability (learner,wforce)	Approved work item, in progress
Employment	We have standards, but need to define supporting code lists
Staff	We have standards, but need to define supporting code lists
Data access labelling	To support security of information
Data Quality metadata	To allow stakeholders to discuss their quality requirements and ensure that data shared is fit for the recipients’ purposes.
Family relationships	We have a general data structure and approved standards, but need to define code lists.
Dinner money	Supporting the exchange of information between MIS systems and LP catering facilities.
LP Types	Approved work item, in progress
Code Lists	Code lists, other than mentioned above, are needed to complete the foundation standards we already have. This work was recognised as needed when standards were

	developed to support the 14 – 19 policies, but has been overtaken by other standards-creation priorities.
Extended Learner data, e.g. mode of travel, language, etc.	To support transfer of information between LPs and some central collections.
Address	Approved work item, in progress
DSD Migration	The DfE Data and Statistics Division (DSD) has announced its intention to migrate schools collections to become compliant with ISB standards. ISB and the TSS will work closely with DSD to support this migration.
Sure Start	New policy on funding support for Sure Start Centres based on performance will require new monitoring of outputs and/or outcomes.
Engage Policy Teams	ISB will proactively seek engagement with BIS and DfE Policy Teams to ensure that potential demands for new standards in support of new policies are identified in sufficient time to develop the standards before they are needed.

Annex A: Outline lifecycle and process

Stages

43. A standard will typically go through the following lifecycle stages:



a. **Future** - Standards that fall within this category are those for which development is yet to start but have been identified as areas of high impact and high importance for the ESCS system. Although an initial assessment has been completed of these standards it is recognised that that further work is required to define their scope

b. **Under consideration** - These are standards for which development work is ongoing and those under review.

c. **Approved** - These are standards that have been approved by the ISB for use within the ESCS system and given the status of Adopted, Recommended or Inherited.

Standards Approval Definitions

44. When the ISB approves a standard it is given one of the following statuses:

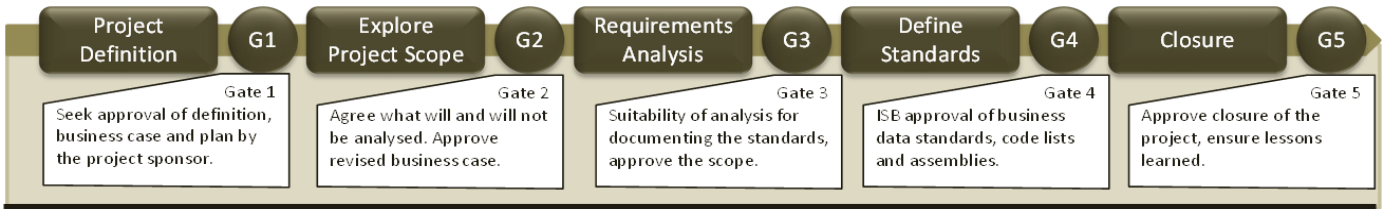
a. **Approved Status 'Adopted'** - the standard is approved by the ISB, ready for unconditional adoption across the system and should be used freely.

b. **Approved Status 'Recommended'** - the standard is approved by the ISB, ready for adoption across the system and should be used freely. Some fine tuning may be necessary based on user experience and the standard will be reviewed after an agreed period before the ISB confers the status of 'Adopted'.

c. **Approved Status 'Inherited'** - the ISB recognises that there are many standards that pre-date current arrangements and are in widespread use. Such standards will, in time, become superseded by a number of Business Data Standards. The importance of such standards is recognised by the ISB through conferring 'Inherited' status.

Standards Development Process

45. The ISB has approved a process for the creation and maintenance of standards. A summary is shown in the figure below:



deliverables				
Project definition statement Initial outline business case Plan for defining project scope	Project scope analysis. Outline business case. Plan for requirements analysis.	Business analysis Full business case Plan for defining the standards	Business data standards, code lists, assemblies Traceability - canonical mapping Updated BDA Board papers	Published data standards, code lists, assemblies Published ISB newsletter Finalised data quality and implementation plans
tasks				
• Capture and document the project's end user and sponsor's vision for the project • Write an initial outline business case for the project • Plan the next stage of work	• Identify ESCS business scope for the standards. • Explore the business scope – what processes, data are involved. • Identify stakeholders. • Meet with small number of more important stakeholders to explore the subject area and identify business drivers. • Agree the type of business model needed for requirements analysis • Plan and arrange workshops and interviews for requirements analysis stage. • Update business case.	• Conduct workshops, interviews, and document analysis • Develop physical business models and confirm these with stakeholders • Develop generic business models and data requirements • Identify initial entity map for the BDA • Identify which business standards can be developed, and which areas may need to be deferred • Finalise the business case • Develop plan for next stage • Prepare board submission	• Model the new standards in the BDA • Develop canonical mapping • Develop storyboards and evidence base • Develop business data standards, code lists and assemblies • Develop data quality and implementation plans • Full peer review • Stakeholder confirmation and feedback • Resolve issues as they arise • Prepare final version s of standards, code lists and assemblies • Complete comments resolution log • Prepare board submission	• Conduct lessons learned review. • Complete data quality and implementation plans • Log issues with any released standards, templates of development method.

Annex B: Glossary

ALBs	Arm's Length Bodies
BDA	Business Data Architecture
BDS	Business Data Standard
BIS	Department for Business, Innovation and Skills
BSI	The British Standards Institution
CBDS	Common Basic Data Set
CEN	The European Committee for Standardization
DfE	Department for Education
DSD	Data and Statistics Division
ESCS	Education, Skills and Children's Services
FE	Further Education
HE	Higher Education
HEFCE	Higher Education Funding Council for England
HESA	Higher Education Statistics Agency
(The) IA	The Information Authority
ILR	Individualised Learner Record
IMPs	Information Management Partnership for Schools
ISO	International Organization for Standardization
JCQ	Joint Council for Qualifications
LeGSB	Local e-Government Standards Body
LETSI	Learning-Education-Training Systems Interoperability
LPs	Learning Providers
LRS	Learning Records Service
Ofqual	Office of Qualifications and Examinations Regulation
Ofsted	Office for Standards in Education, Children's Services and Skills
QCDA	Qualifications and Curriculum Development Agency
SALTIS	Suppliers Association for Learning Technology and Interoperability in Schools
SCA	Strategic Content Alliance
SFA	Skills Funding Agency
SIF	Systems Interoperability Framework
SIFA	Systems Interoperability Framework Association
SIGs	Special Interest Groups
SLC	Student Loans Company
STA	Standards and Testing Agency
SIWG	Standards Implementers' Working Group
TDA	Training Development Agency
TDS	Technical Data Standard
TSS	Technical Support Service
YPLA	Young People's Learning Agency

Annex C: The information landscape

In this section the key features of the ICT landscape relating to ISB standards are described. The landscape is complex:

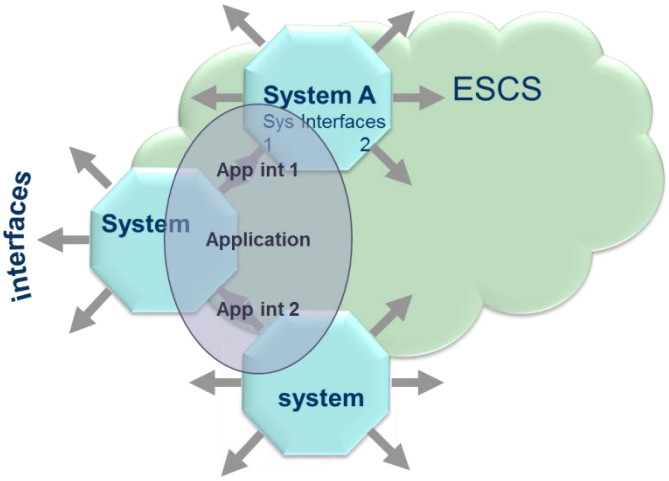


Figure 1: the landscape

Figure 1 Key:

- **System**: ICT software instance. For our purposes we are interested in systems that communicate through one or more interfaces
- **System Interface:** part of a system that exchanges information with another system
- **Application:** collection of communicating systems fulfilling a business objective
- **Application Interface Specification:** a specification of data, formats and behaviours required to achieve communication between two System Interfaces within an Application

ISB standards are concerned with data exchange, which takes place between two “System Interfaces”, and with data linkage, where data from two or more systems are matched together. A group of Systems may be designed to exchange or link data for a particular purpose and such a group is called an “Application”. To ensure that the Application achieves communications between systems, or linking of data from across several systems “Application Interface Specifications” are produced defining what communicating systems must do when communicating.

Historically, Application Interface Specifications have been produced in (relative) isolation. The net impact has been that systems are able to exchange data consistently within an application but there is no consistency between applications. This hampers future integration between applications and limits the utility of the information across ESCS.

The aim of ISB standards is to achieve commonality of information across all ESCS Applications. This in turn leads to a more complex conformance environment than hitherto: the need to ensure that Application Interface Specifications themselves conform to ISB standards.

So, in the past *systems* were required to conform to *Application Interface Specifications*. Now, in addition, *Application Interface Specifications* are required to conform to *ISB standards*.