Position Paper on Accessibility and Inclusion aspects of Learner Interoperability Framework for Europe

Andy Heath, Sheffield Hallam University UK, a.k.heath@shu.ac.uk

Given the huge breadth of the problem I have chosen to focus my responses to the questions posed around the accessibility and inclusion aspects of the growing integration of eLearning systems. I observe many of the issues that accessibility brings up form a microcosm of issues that occur in the other domains involved.

I welcome this initiative towards greater interoperability of eLearning systems across Europe. I believe it can yield significant benefits for inclusion of all citizens, a more skilled and happier workforce and greater levels of communication and prosperity.

Key Issues, Obstacles and Drivers for Accessibility of Integrated eLearning

A central issue for accessible interoperable eLearning is created by the **huge variety** of **heterogeneous assistive technologies, approaches, standards and guidelines, devices, individual requirements** and the need to match these together to provide an accessible learner experience. Often assistive technology vendors are small in scale and don't have the resources to quickly redesign products when major vendors make changes, with the result that persons are excluded by software changes such as operating system updates. As with many other factors this points the way to the need for **greater cohesion of practices, approaches, guidelines and standards**. There is much useful standards work for accessibility but the **eLearning accessibility standards jigsaw is not yet complete**.

Across Europe there is a **growing population of aged people** and across the world there is a **shift towards more use of mobile devices.** Both of these present potential challenges that impact on the infrastructure of a European Learner Interoperability Framework. Elderly persons often have increasing difficulties using the access modes commonly provided with a younger market in mind and need content and systems that can adapt to the ways that they can use. This is a **potentially very large market** that is not presently well-reached by eLearning systems. Learning does not stop at some particular age.

The changes required in order to reach such markets require that there are **integrated standards** that vendors can follow and that **sufficient infrastructure** is in place that vendors can respond to given the normally short investment return timescales that medium or small scale investors must have. Assistive technology vendors are often particularly affected here by virtue of being small scale.

There is a need for an interoperable (probably service) architecture for learning objects that we all agree on that supports provision of accessibility. This is not straightforwards because not all of the needed basic standards work to support accessibility of eLearning has been yet done. Work is underway in CEN-ISSS[1], IMS[2], ISO IEC JTC1 SC36[3], IEEE LTSC[4], W3C/WAI[5] and other places and efforts are

made to integrate this work with varying success (see for example [6]). Taking the W3C/ WAI work as example, one of the main planks of this is the guidelines called Web Content Accessibility Guidelines[5].   These guidelines on making content accessible are useful and widely known but they are not sufficient and the incorporated notion of a single universally accessible resource is flawed. Much more work is needed to show how guidelines such as these can be used, together with other approaches and standards, to adapt content and systems to meet individual needs in real contexts. In order to make them useable **work is needed on how to integrate their use in real contexts, with learner profiles** such as IMS Learner Information Package Accessibility for LIP (ACCLIP)[2]**, with Accessibility Meta-data on Learning Objects**, and with other technical work ongoing. The **pressure to develop Quality Certification schemes for eLearning Accessibility in Europe** is such that there is a **danger that organizations may rush these through** before the necessary technical pieces are developed and tested.   Work is urgently needed **to trial approaches to accessibility that integrate technologies and standards** before they are rolled out large-scale.

Real learning doesn't take place using only eLearning or using only non-eLearning but integrates both.   Similarly accessibility solutions often require integration of eLearning and non-eLearning. **Work is needed in many standards to "soften the hard edge" and show how accessibility can be provided in real heterogeneous environments.** For example the alternative for some learner for some online resource may be a combination of a different course and human assistance. Current standards and systems do not well cope with this kind of requirement.

To date much **eLearning work has focused on delivery of content**. Real learning, as compared to training, takes place through **participation**. Educational systems in all sectors realise this and a shift towards more authoring and participation is underway. One place this is realized in eLearning is in **ePortfolios**. Efforts are underway in IMS (IMS Eportfolio Specification[7]), the European Portfolio Initiatives Co-ordination Committee (EPICC[8]) and other places to establish interoperability of ePortfolios.   ePortfolios encourage also the integration and appropriate valuation of formal and informal learning and social networks. ePortfolios also can form the link between organizational use of data about learners and personal use.

Much **current accessibility work has also focused on content delivery**. With the shift towards more learner authoring and participation there is a need **to gather together and publicise practices and guidelines on accessible media and authoring practices that enable collaborative authoring**. A learning product may be authored collaboratively by persons with quite different and possibly conflicting access requirements. This places stress on the media representations and the way media is used as it passes between persons – some things work and some do not. The W3C/WAI Authoring Tools Accessibility Guidelines[9] have begun the work of producing guidelines but much more work is needed. A European database of such practices could be a way to do this. **This is a vital component to establish participation of excluded persons.**

Accessibility of ePortfolios requires developing a common architecture by which data on learner profiles (e.g. ACCLIP) enabling adaptation of content and interface can be applied across systems. When a learner applies for a job there may

be several relevant sets that have been or need to be applied, for example those of the learner, the assessor and the interviewer. These may conflict (what is accessible for one person may be different to what is accessible for another) and there may be privacy concerns to honour (it may be possible to deduce a user's disability from a profile). A technical approach to this that can operate across systems needs to be developed.

There are **many minor technical issues** that need addressing in harmonising standards so as to **enable interoperability across cultures and languages.** It is very desirable that learning resources are available in multiple languages where that is possible. We all benefit from the increased communication, availability of resources we can use, and the increased capability for quality. This same argument applies to the accessibility of resources whatever our personal access requirements are.

Finally, the overriding need of accessibility is cohesion of approach. We need to understand and agree the definitions of terms we are using, whatever languages or Meta-data schemes they are in, to know when we are using the same terms but calling them different things and that we use them the same way. **I recommend the development of a European Taxonomy of Accessibility Terms in multiple European languages.** Such is proposed by CEN-ISSS Learning Technologies Workshop1.

References

[1] http://www.cenorm.be/isss/Workshop/lt/

[2] http://www.imsglobal.org/accessibility/index.html

[3] http://jtc1sc36.org/ in wg7

[4] http://www.ieeeltsc.org/wg11CMI/ramlet/Pub/RAMLET_project_description.pdf

[5] http://www.w3.org/WAI/ , particularly Web Content Accessibility Guidelines (WCAG) http://www.w3.org/WAI/intro/wcag.php

[6] http://dublincore.org/accessibilitywiki/

[7] http://www.imsglobal.org/ep/index.html

[8] http://www.eife-l.org/activities/epicc

[9] http://www.w3.org/WAI/intro/atag.php