



Ministry  
of Defence

**THE DEFENCE TECHNOLOGY ENHANCED  
LEARNING CENTRE (DTELC)**

**TECHNOLOGY ENHANCED LEARNING (TEL)  
e-LEARNING STANDARDS PROFILE (eLSP)**

V2.0

### Version History

Version	Date Issued	Comments
V1	23 Sep 14	Initial version issued
V1.1	2 Oct 14	Style guide reference clarified
V2.0	15 Oct 15	Updated – Reissued

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# THE DEFENCE TECHNOLOGY ENHANCED LEARNING CENTRE (DTELC) TECHNOLOGY ENHANCED LEARNING (TEL) e-LEARNING STANDARDS PROFILE (eLSP)

## Introduction

1. The DTEC programme aims to apply coherence across Defence increasing effectiveness and agility, and reducing costs in UK and coalition operations, standing commitments and contingent capabilities through the contribution of underlying Training and Education (T&E) systems. This is to be achieved by supporting training from individual to collective, single Service and Joint within MOD, coalition and agency partners.
2. Developed as a Defence-wide enterprise system, DTEC will enable cross domain, VfM and forward looking approaches to software and hardware.

## Purpose

3. The purpose of the TELeLSP is to provide an introduction to the importance of, and guidance in the selection of, standards for e-Learning for the acquisition, development and management of training systems across Defence.
4. The TELeLSP is complementary to the DTEC Modelling and Simulation (M&S) Standards Profile (DMSP). The TELeLP is living document to reflect that e-Learning standards are continually evolving and to demonstrate the forward looking vision for Defence training. The assumption is that the latest approved version of each standard is selected.
5. The principles in this document are mandated. These ensure Defence remains technologically current with respect to media content and its delivery. However, full justification from a Through Life Capability Management (TLCM) and JSP 906: Design Principles for Coherent Capability viewpoint should be provided if an alternative standard is selected.
6. The TELeLSP only addresses the principles and standards which apply to the construction of e-learning content. The use of media within e-learning content, courseware, wrapped content and its delivery shall be addressed in separate Service Command and Defence policy.

## Background

7. Enhanced learning experiences can be enabled by exploiting the power of data, spurring innovation and improved quality of delivery. Next generation learning will be accessible from any device, from any location, with personalised and modularised content.
8. The MOD and wider defence community recognises that common e-Learning standards are required to address issues with:
  - a. **Communications.** The interconnectivity and communications between training and other related systems, e.g. C2 systems.
  - b. **Interoperability.** The exchange and use of data between T&E and other related systems, such as JPA, including the use of personnel data.
  - c. **Cost.** Reducing cost and providing better value for money.
  - d. **Re-usability.** The ability to be able to re-use and share content from one business unit to another, one system to another, often learning from experience.

9. Current Government policy calls for the use of open standards and the avoidance of proprietary standards. This applies equally to the TELeLSP. Although it is not always possible to achieve this directly, those proprietary standards that are chosen must be common or de facto standards such that they can be opened and converted by a suitable array of COTS tools. In order to add clarity to this statement, any unapproved modification or enhancement to an open standard results in the creation of a proprietary standard and therefore its use is to be avoided. It is accepted that the use of recommended standards may reduce functionality and thus seem unattractive but the overall benefits to Defence in terms of reuse and interoperability outweigh such drawbacks.

10. The approach within this TELeLSP ensures Defence operates in a manner to improve and align its organisations, incorporates new technologies into Defence training, exploits opportunities available from the private sector, and develops a continuum of lifelong learning and personal and professional development for our personnel. By adhering to specified standards, instructional materials source data can be electronically interchanged and reused amongst the Services, across other Government Departments and with coalition nations. This is increasingly valuable as content at particular classifications can be interchanged with other Services, Departments and Nations, enhancing interoperability and exploiting their investments. Thus, this TELeLSP aligns with other nations and agencies standards, including the Advanced Distribution Laboratory (ADL).

11. Effectively designed e-learning can be used to deliver accessible, adaptable, interactive, competency based, individualised multimedia instruction. Enabling reuse across media development ensures that the content, be it Training Objective or its supporting media can be tailored to meet individual student's requirements, be deployable and provide Just In Time (JIT) training.

12. E-learning content can also be repurposed and used across the DLODs if constructed and developed iaw these principles and standards. Examples of such reuse could be for maintenance or logistics.

13. The usage of the principles within this TELeLSP are complementary to Defence wide capabilities in development under DTEC for delivery mechanisms and their supporting networks. These include but are not limited to the development of the Defence Learning Environment (DLE), Defence Learning Management Capability (DLMC), Defence Gateway (DGW), ISS Training and Education Service Project (ITESP), advances in Distributed Training including Wi-Fi and advances in mobile delivery.

## **Principles**

14. That Create, Share and Adapt<sup>1</sup> (CSA) should be core to the construction of e-learning content. The ability to CSA content across multiple communities promotes interoperability.

15. All content must be developed in non-proprietary, open standards. Media content creation shall be intelligently structured for agnostic delivery, optimised in size and formatted for responsive viewing. This will ensure that the user experience for the delivery of content over distributed means will not be degraded i.e will function on any user access device (UAD): Windows, Apple or Android; desktop, lap top or tablet; Internet Explorer or Chrome. N.B. When developing content that is to be delivered on DII(F) consideration must be to the fact that content passing through the Enterprise Gateway Services (EGS) and being able to function on Windows XP and IE8 (Post Tech Refresh; Windows 7, IE8 and Chrome).

16. Content shall be developed for deployability to enable ease of distribution. The composed media product and its underlying source components must be developed in such a manner that in their constituent form they can be reused. This also ensures that as a composition of the parts, any

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<sup>1</sup> Niteworks Create, Share, Adapt Learning Content (CSALC) Report for DTrg(A) dated 23 Apr 14.

composed product can be equally deployed regardless of software and system requirements. Such composability shall also ensure that the source components and formats are all deployable over future platforms, be they standalone, distributed, or mobile.

17. That content shall be created for a combination of both graceful degradation<sup>2</sup> and progressive enhancement<sup>3</sup>. This is to ensure successful delivery of learning content across many different systems and platforms.

18. That all media content is developed in accordance with D&I regulations for Defence Learning<sup>4</sup>.

19. That Crown retains the Intellectual Property (IP) on all underlying source component formatting, all underlying models and data developed. This enables the same underlying model, component formatting and data to be reused across many applications and software be it in its complete or constituent parts.

20. That the media content is held or referenced by DTELC for future use.

21. That all content shall be developed in accordance with an approved Style Guide available from the Defence Branding Portal<sup>5</sup> which details the layouts, process and styles to be used to create consistent media to ensure an agnostic user experience.

22. That all content creation shall be developed in line with the latest Government ICT Strategy, the Digital in Defence Strategy.

## Standards

23. To ensure both effective course and content design, the following e-learning media standards are to be applied:

a. Image files are to suitably sized for multiple UADs and appropriately compressed; acceptable image file types are .jpeg or .png.

b. Video files are to be suitably sized for multiple UAD and appropriately compressed: the acceptable video file type is MP4<sup>6</sup>.

c. Audio files are to be suitably sized for multiple UAD and appropriately compressed: the acceptable audio file type is MP3<sup>7</sup>.

d. Streaming media is to be developed in HTML5. HTML5 enables video to be played on the web without plugins, instead of the previous de facto standard of using the proprietary Adobe Flash plugin; Adobe Flash has been hampered by lack of agreement as to which video coding formats should be supported hence it does not function in all major web browsers.

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<sup>2</sup> The practice of building an application for browsers ensuring it remains functional in older browsers.

<sup>3</sup> The practice of building an application for a base level of user experience but adding functional enhancements when a browser supports it.

<sup>4</sup> <https://www.gov.uk/service-manual/user-centred-design/accessibility>

<sup>5</sup> <http://defencebrandportal.mod.uk>

<sup>6</sup> Video file type compatibility details can be found at [https://en.wikipedia.org/wiki/HTML5\\_video#Browser\\_support](https://en.wikipedia.org/wiki/HTML5_video#Browser_support); however, this is provided as guidance only and content developers must verify their requirement prior to committal.

<sup>7</sup> Audio file type compatibility details can be found at [https://en.wikipedia.org/wiki/HTML5\\_Audio](https://en.wikipedia.org/wiki/HTML5_Audio); however, this is provided as guidance only and content developers must verify their requirement prior to committal.

e. SCORM<sup>8</sup> 1.2 is supported by the DLE (Moodle 2.6) and passes all the tests in the ADL Conformance test suite 1.2.7 for SCORM 1.2. The best place for information on SCORM 1.2 conformance is the ADL SCORM Version 1.2 web page<sup>9</sup>. Content designers should be familiar with the delivery of SCORM 1.2 resources from Moodle to ensure that outcomes are correctly recorded in the Moodle Gradebook. Details of how to use SCORM with Moodle are available from MoodleDocs<sup>10</sup>. In brief:

(1) SCORM packages are to be developed such that the tracking and reporting elements of the SCORM are recorded in the DLE as the “Highest Grade” or as a “Learning Object”:

(a) **Highest Grade.** If the SCORM rapped e-learning package contains both learning content and an assessment, the DLE course setup will record the ‘Highest Grade’. The reporting settings within the SCORM package is to be set as ‘Pass/Fail’ and the assessment results as a ‘Percentage’. Other SCORM settings for Highest Grade will not correctly pass outcomes in the DLE.

(b) **Learning Object.** If the SCORM rapped e-learning package contains learning content but no assessment, the DLE course setup will be recorded as a ‘Learning Object’. The reporting setting within the SCORM package is to be set as ‘Complete/Incomplete’. Other SCORM settings for Learning Objects will not correctly pass outcomes in the DLE.

(2) The uploading and linking of SCORM packages within the DLE is described in the [Course Designers’ User Guide](#).

f. SCORM 2004 is not supported in the DLE.

## Summary

24. As Defence moves towards a multi-device, multi web-browser technology landscape, e-learning content need to be intelligently developed to ensure delivery capability is achieved across a range of platforms.

25. The ultimate aim is to deliver training and education with increased operational effect that is less resource intensive for Defence. This will go a long way to ensure that the MOD delivers coherent and interoperable training content across the Whole Force.

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<sup>8</sup> Sharable Content Object Reference Model

<sup>9</sup> <http://www.adlnet.org/scorm/scorm-version-1-2.html>

<sup>10</sup> [https://docs.moodle.org/26/en/SCORM\\_settings#Compatibility\\_settings](https://docs.moodle.org/26/en/SCORM_settings#Compatibility_settings) and [https://docs.moodle.org/26/en/SCORM\\_FAQ](https://docs.moodle.org/26/en/SCORM_FAQ)