THROUGH LIFE SUPPORT STANDARD

Guidance on creating TLSS Reference Data

LSC REFERENCE: ECSMODTLSS5025.121
ESL REFERENCE: Eurostep.ESUKPC09.000158

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Issue	**Date**	**Client**
1.0	01 November 2007	TLSD Policy Coordination - TLSS Project Manager

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Amendment Record

Issue	Date	Summary of changes
1.0	2007-11-01	First Issue, delivered by TLSS Work Package 1, Sub-task 1

Distribution

This document has been distributed to:

Copy No	Media	Location	Title
1	PDF File		TLSD Policy Coordination - TLSS Project Manager

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1 INTRODUCTION

1. The methodology by which TLSS Reference Data is developed is defined in the TLSS Reference Data Development Methodology document [1].
2. The process for creation of PLCS reference data is defined in DEXlib available online at [2].
3. It is assumed that the accounts and software listed below are activated and set up / installed.

2 KNOWLEDGE, SKILLS AND TOOLS REQUIRED

1. The process requires a thorough understanding of:
   - The elements of the PLCS data model that require instantiation in the template for which the reference data needs to be applied.
   - The TLSS business object model, in particular, the TLSS business object for which the associated template or business template is defined.
   - The TLSS DEX(s), their constituent information flow classes and the related information requirements that the associated business objects satisfy.
   - The TLSS domain(s) within which the DEX will be used.
   - UML information modelling methods and practices.
   - The existing PLCS and TLSS reference data.
   - The reference data management and development cycles.
   - The template instantiation path language.
2. The following accounts and software are required:
   - DEXLib developer account on Sourceforge. See DEXlib help file http://www.plcs-resources.org/plcs/dexlib/help/dex/dvlp_intro.htmm
   - CVS and associated encryption software (Putty, Plink, Puttygen, Pageant) – for downloading and uploading files to Sourceforge. See DEXlib help file http://www.plcs-resources.org/plcs/dexlib/help/dex/dexlib_cvs_access.htm
   - DEXlib – including utilities for creating the DEX and its constituent files. See DEXlib help file http://www.plcs-resources.org/plcs/dexlib/help/dex/dexlib_cvs_access.htm
   - TLSS Information Requirements repository read only account – for accessing the requirements repository and lodging issues against it.
   - Protégé and OWL plug-in – see http://www.plcs-resources.org/plcs/dexlib/help/dex/sw_protege.htm

3 GUIDANCE NOTES

1. The need for TLSS reference data will have been specified when the input parameters and the instantiation path of a TLSS business template were defined. These define which elements of the PLCS data model need to be classified in order to capture the meaning of the business object for which the template is created.
2. In creating TLSS reference data, the developer has to be very clear about the semantics of what is being defined. TLSS reference data exists to add more specific meaning to the generic PLCS entity types. As such, all TLSS reference data (with the one exception noted below), has to be viewed as being a direct or indirect class extension to a PLCS entity type. Therefore, all TLSS reference data classes must be a true subclass of the PLCS entity (or derivative) for which it is defined. For example, the set of “DEF STAN 00-60 task types” (such as “adjust”, “clean”, “repair” and so on) are a true subset of the PLCS entity type “task”.

3. The one exception to this is if members of a class have been identified and need to be referenced. For example, the enumerated set of country codes are all members of the class named "country_code", they are not subclasses of it because they are individuals and can never be sub-divided. In this case, these must be defined to be instances[1] of the relevant class rather than subclasses of it.
4. In addition to the process of developing and publishing reference data in OASIS[2], it is expected that there should be a single 'plcs-rdl-tlss.owl' which allows the contents of each TLSS modeller's file to be referenced. This will ensure that reference data is not being duplicated across modellers.

The basic OASIS PLCS TC reference data publication process is described in detail in reference [2], but the following figure is included for reference purposes[3].

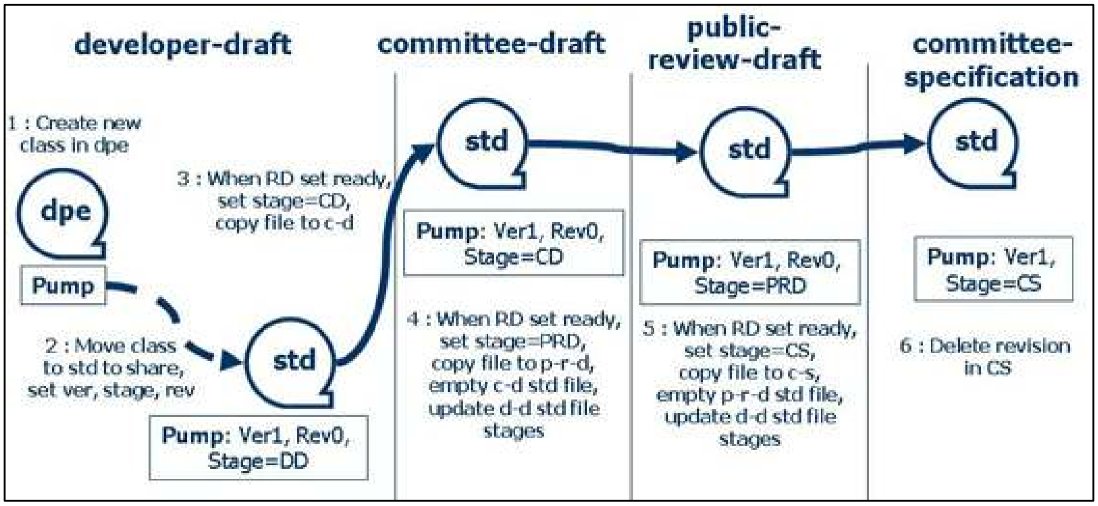
developer-draft
committee-draft
public-review-draft
committee-specification
1 : Create new class in dpe
dpe
Pump
2 : Move class to std to share, set ver, stage, rev
std
Pump: Ver1, Rev0, Stage=DD
3 : When RD set ready, set stage=CD, copy file to c-d
std
Pump: Ver1, Rev0, Stage=CD
4 : When RD set ready, set stage=PRD, copy file to p-r-d, empty c-d std file, update d-d std file stages
std
Pump: Ver1, Rev0, Stage=PRD
5 : When RD set ready, set stage=CS, copy file to c-s, empty p-r-d std file, update d-d std file stages
std
Pump: Ver1, Stage=CS
6 : Delete revision in CS

Figure 1: OASIS Reference Data Publication Process

4 APPROVAL OF TLSS REFERENCE DATA

1. MoD shall define the process and the criteria for acceptance. However, it is expected that key aspects of the reference data class hierarchies and any specified individuals will be assessed as part of DEX and template acceptance.
2. Clearly where non-TLSS specific templates and reference data are involved, these should be progressed through the OASIS route to publication.
3. For TLSS-specific reference data, the approval should include a process of identifying reference data which may be inconsistent, synonyms, contradictory or confuse classes with individuals. Such reference data may then be the subject of maintenance.
4. The checklists being developed by OASIS for Templates, Capabilities and DEXs also provide a degree of fitness for purpose. However, the MoD may wish to create an MoD their own version of these specifically for TLSS DEXs and Business Templates.

[1] Instances and individuals are used interchangeably here.

[2] Where individual modellers may have their own OWL files during reference data development

[3] It should be noted that this may change over time.

5 MAINTENANCE OF TLSS REFERENCE DATA

1. MoD shall define the process. However, experience within OASIS shows that harmonization workshops may be required where the work is developed over time, by different projects and different people of varying experience.
2. The tools referred to above (esp. Protégé) also have a degree of either built-in facilities or plug-ins that allow some degree of automated checking (for some of the issues noted above), which may be useful in maintaining TLSS reference data.
3. Maintenance is helped by the fact that the reference data classes are versionable and that DEXLIB supports issue logs against reference data classes.
4. Any such maintenance of TLSS reference data may need to be done with a view to the progression of reference data classes through the OASIS publication process and the fact that the definitions of these classes may move from developer files to the committee-draft, the public-review-draft or the committee-specification files over time.
5. Hence the timing of maintenance activities may be triggered by either changes to the content, or to the publication cycle of OASIS.
6. Each TLSS DEX should retain its own local copy of all reference data used (including all dependants), however, MoD may wish to retain a local copy of all TLSS reference data to ensure consistency in the long term.
7. When the reference data is modified, it frequently means that those specifications which use it also need to be maintained. Hence, MoD may wish to organize these activities to coincide with each other.
8. Maintenance issues are further described at [1]

6 REFERENCES

[1] TLSS Reference Data Development Methodology; LSC REFERENCE: EWSESLTLSS0605; EUROSTEP REFERENCE: Eurostep.ESUKPC12.000621
[2] http://www.plcs-resources.org/plcs/dexlib/help/dex/dvlp_refdata.htm.
[3] The structure and content of OASIS PLCS DEXs.[4]
[4] PLCS DEX Development Guidance.
[5] TLSS Data Exchange Specification Development Methodology.
[6] TLSS Process Model.
[7] Guidance on writing TLSS Business Objects
[8] Guidance on writing DEXlib TLSS Templates

[4] This documentation was published on DEXlib in October 2007 under ‘Information about PLCS - Technical description of PLCS’.