**Suggested steps to understanding how to track progress and use Learning Objects**

**Step 1: Have a decent understanding of SCORM.**

SAP is SCORM compliant with the latest versions: SCORM2004 (sometimes referred to as SCORM 1.3!) and 1.2. It is preferential to work with SCORM2004 as it has more rigorous standards.

The problem with SCORM is that there are different versions and different organisations involved in developing the standards i.e. there is no one standard!!!!!!!

Below are links to the most common SCORM sites

http://www.adlnet.gov/Pages/Default.aspx

http://www.imsproject.org/

http://www.aicc.org/

To get a decent understanding, my advice is to have a read through the article you can find at the following website (and Tony & Barry can help interpret if required):

http://www.icslearninggroup.com/whitepapers/what-is-scorm.htm

**Step 2: Have a reasonable understanding of the IMSMANIFEST.XML file**

Each SCORM compliant piece of E-Learning will have an IMSMANIFEST.XML file. The file contains the definition of the structure of the Course. Amongst the definition is the number of SCO's (Sharable Content Object). These are 'self-contained' learning objects that can be whole courses or 'modules/chapters' of a course.

A SCO is linked to an 'Asset', a media object that contains the content that a learner will view on the screen. 'Assets' must be compatible with a browser. The recommended file types are .html (web pages), .swf (Flash), and .FLV (Flash Video).

**Step 3: Understand the link between SCORM & SAP**

## SAP & SCORM Terms

| A Book | SAP | SCORM Shareable Content Object Reference Model |
|---|---|---|
| Collection of Training Manuals | Learning Nets | Content |
| Training Manual | Learning Net | Block |
| Chapter | Learning Object | SCO (Shareable Content Object) |
| Lesson | Instructional Element | --- |
| Page | Media Resource | Asset |

SAP follows a similar structure to a SCORM compliant course with one addition.

Notice that an SCO is the equivalent of a 'Learning Object' and an 'Asset' is the equivalent of a 'Media Resource'.

It is not possible to hang 'Media Resources' (Assets) directly from a Learning Object in SAP. Instead, SAP uses 'Instructional Elements'.

It follows that a SCORM course that only has one SCO will create an SAP Learning Net (Course) with ONE Learning Object.

Please note! Most manifest files that you see coming from authoring programs such as Macromedia Captivate and Articulate Presenter will not nest the item nodes into modules, but rather contain only one item node (representing the SCO) within the organization.

If there is just one SCO, generally speaking, a conversion will lead to one 'Learning Net', one 'Learning Object', one 'Instructional Element' with one 'Media Resource' attached.

If you have multiple SCO's then this will lead to (generally speaking) multiple Learning Objects.

If you just want to use the 'Assets' from a SCORM and not the whole structure then 'import them into the Learning Object and assign the asset to an Instructional Element.

The files created during a conversion from A SCORM course to a Learning Net include the following:

- Learning Net (.crs file)

- Learning Object (.ide file)

- A Test (.map / .tac file)

I left two files on Sandra's laptop with examples of basic courses. One is a SCORM2004 called 'Visiting France' and one is a course called 'Logging on to SAP'. The first example is a multi-SCO course, the second is a single SCO course. If you import them into the Authoring tool you will have decent references.

**Step 4: How is Completion Progress measured in the SAP Learning Solution?**

There are a number of ways that a Learner's progress is measured. None are very easy to understand!!!!

**(a) SCORM Tracking**

The first important thing to know is the SCORM Version, 1.2 or 2004 (1.3)?

Why?

When a Learner starts a course in the Learning Solution the following happens:

(i) The Content Player loads a SCO (Learning Object)

(ii) THE SCO searches for something called a SCORM-API (Application Programming Interferace).

(iii) THE API tells the LMS that the course is started (called an 'Initialize Function'). The LMS is now ready to record progress.

(iv) The Learner moves through the content. The SCO continues to sends and receives data to and from the LMS (using 'set' and 'get' methods in the API). (For further information, please read the document called 'Technical Content Considerations' Pages 18 and 19).

(v) When the content is completed, the SCO sends the 'Terminate Function' to the LMS i.e. tells SAP that the SCO is complete.

(vi) The next content to be loaded (next SCO/Learning Object/SubNet) is determined using the course structure or the 'Macro Strategy' if it has been defined.


**How do I report on progress?**

The data recorded during a course can be accessed using databrowser in the SAP ERP system (transaction SE16). The tables that contain the data are as follows:

- LSOCPSCORMSSTR
- LSOCPSCORMLSTR
- LSOCPSCORMINT
- LSOCPSCORMREAL

To make life slightly easier, use transaction SCORM_DATA_REPORT. The 'Raw Score' is a % completion score or % result from a Test. N.B. The scores are not cumulated for multiple SCO's, they are held against each individual SCO.

(b) Progress tracked using **Completed Learning Objects:** If there is only one SCO (Learning Object) then the 'Completed Learning Objects' score will be 100% when the course has been completed. Until it has ended it will remain at 0%. If there are multiple Learning Objects then the % will change as each Chapter is completed.

p.t.o.

# Completion Progress: The Portal



Web-Based Training : BlackBerry :

Course Catalog > Professional Training > Information systems > Handheld Tools > BlackBerry

**You are already booked for this course.**

Start Course Now

**Course Duration**

The average completion time for this course is 35 Minutes (minimum 20 Minutes, maximum 50 Minutes). The course is licensed from 10.04.2010 to 31.12.9999.

**Completion Progress:**
Total number of instructional elements completed / total number in Learning Net

**Completed Learning Objects:**
Total number of learning objects completed / total number in Learning Net

**Learning Progress**

| | |
|---|---|
| Booking Date | 10.04.2010 |
| Course is licensed as of | 10.04.2010 |
| First Accessed on | Not Yet Started |
| Last Accessed on | Not Yet Started |
| Total Completion Time to Date | 0 Minutes |
| Completed Learning Objects | 0% |
| Completion Progress | 0% |
| Current Status | 0% |
| Completion Status | The course ha... |

**Current Status:**
Total number of learning objects completed / total number required to be completed

**(c) Completion Progress:**
> As per the slide above. Total number of instructional elements completed / Total number of instructional elements in the Learning Net

(d) **Current Status:** As per the slide but see (e) for how it knows how many Learning Objects that are needed for completion.

**(e) Pass or Fail**

To ascertain whether a Learner has passed or failed SAP either uses Learning Objects or Learning Objectives or both or nothing.

- Learning Objects, generally speaking, are SCO's and in plain English are 'chapters'.
- Learning Objectives can be assigned to each Chapter or even tests.
- i.e. If both boxes are ticked in the screen below and have % required then a Learner will have to complete a number of Chapters AND also be credited with a certain number of Learning Objectives to pass.
- N.B. Each Test can have its own individual 'pass' criteria
- N.B. A pass using the SCORM DATA Report above is defined within the imsmanifest file.

p.t.o

# Completion Progress: SAP ERP



Infotype  Edit  Goto  View  System  Help

**Display Completion Specifications**

Find by
▽ 📁 Course Type
　　🔍 Search Term

Course Type — BlackBerry — BlackBerry
Planning Status — Active
Start date — 01.01.2004 — to — 31.12.9999

Completion Specifications
Maximum Completion Time — 50 — MIN
Minimum Completion Time — 20 — MIN
Optimum Completion Time — 35 — MIN
Specified License Period — 0 — DAY
Availability End Date
Allowed No. of Accesses — 0
Participant Cancellation — Always cancel courses

Follow-Up Options
☐ Include Achieved Learning Objectives as Success Criteria
% Learning Objectives to Be Achieved — 0.00
☐ Include Completed Learning Objects as Success Criterion
% Learning Objects to Be Completed — 80.00

**Completed Learning Objectives:**
Total number of learning objectives completed / total number in Learning Net

**Completed Learning Objects:**
Total number of learning objects completed / total number in Learning Net