

1 Questions about functional requirements

1.1 Didactics / Learning flow management

1. Are there any templates offered for setting up courses, e.g. pre-structured course?

- ☐ Learning Design templates for different purposes can be chosen from a list (3)
- ☐ There is some basic pre-structured course skeleton or template (2)
- ☐ I get some instructions how to structure a course but no template is provided. (1)
- ☐ There is neither a course template nor advice (0)

2. Can tutors define their own course skeletons?

- ☐ Yes (1)
- ☐ No (0)

3. Can tutors define conditional learning paths? The fulfillment of conditions happens in classroom.

- ☐ Yes (1)
- ☐ No (0)

4. Can learning paths be determined by certain test results? The fulfillment of the conditions happens online.

- ☐ Yes (1)
- ☐ No (0)

5. Can alternative learning paths be defined?

- ☐ Yes (1)
- ☐ No (0)

6. Does the system support learning plans e.g. can users plan their long and medium term learning activities, e.g. a schedule for a whole university programme.

- ☐ Yes (1)
- ☐ No (0)

7. Does the system support learner portfolios? Learner portfolios are a record of all of his or her successful learning activities.

- ☐ Yes (1)
- ☐ No (0)

8. How is feedback given to the learner? Please indicate*

* The asterix indicates that the question does not give any points. The information from this question should be stated in the verbal description of the system. It is an interesting information, but it cannot be easily quantified.

1.2 Tests and assessment

9. Does the system offer web authoring functionality for the generation and modification of tests?

- ☐ Yes, and tests can be imported as well. (3)
☐ Yes, but tests cannot be imported. (2)
☐ No, but tests can be imported (1)

10. Please indicate systems tests can be imported from*

11. What type of questions can be employed for testing?

- ☐ Multiple choice questions (1)
☐ Single choice questions (1)
☐ Terms and/or pictures can be matched (1)
☐ Terms and/or pictures can be ordered (1)
☐ Cloze tests (1)
☐ Image-map questions (1)

12. Is there a functionality offering skills management e.g. learner needs analysis?

- ☐ Yes (1)
☐ No (0)

13. Can certificates be generated by the system after finishing a defined workload?

- ☐ Yes (1)
☐ No (0)

1.3 Media formats / authoring

14. Can content be created within the system?

- ☐ Yes (5)
☐ No (0)

15. Contents can be imported from* _____

16. What course content data formats are supported? Please indicate*

17. Can learning objects be imported?

- ☐ Yes, standard compliant learning objects (SCORM or AICC) (3)
☐ Yes, documented learning objects (2)
☐ Yes, not documented (proprietary) learning objects (1)
☐ No (0)

In this question 'documented' refers to a free/open document type definition.

18. Can learning objects be exported?

- ☐ Yes, standard compliant learning objects (SCORM or AICC) (3)
☐ Yes, documented learning objects (2)
☐ Yes, not documented (proprietary) learning objects (1)
☐ No (0)

19. Can courses be imported? The term 'courses' refers to a structured set of learning objects.

- ☐ Yes (1)
☐ No (0)

20. Can courses be exported? The term 'courses' refers to a structured set of learning objects.

- ☐ Yes (1)
☐ No (0)

21. Can learning objects be categorised?

- ☐ Yes using a taxonomy system (2)
☐ Yes only with free-form keywords (1)
☐ No (0)

22. Can learning objects be annotated with metadata?

- ☐ Yes using standard formats (e.g LOM, IMS Metadata, Dublin Core,.) (3)
☐ Yes using XML-based, but proprietary, formats (2)
☐ Yes using only proprietary formars (1)
☐ No (0)

23. Can user data be imported?

- ☐ Yes, in XML (2)
☐ Yes, in propieratry format (1)
☐ No (0)

24. Can user data be exported?

- ☐ No (0)
☐ Yes, all user data can be exported. (1)
☐ Yes, all user data or a subset of user data can be exported. (2)

25. Which media formats for applications are supported? 'Supported' refers to embedded representation in the content frame of the Learning Management System. *

- | | | | | | |
|--------------------------|------------|--------------------------|------------|--------------------------|----------------|
| ☐ | excel | ☐ | powerpoint | ☐ | flash |
| ☐ | word | ☐ | rtf | ☐ | tex |
| ☐ | pdf | ☐ | javascript | ☐ | other, please |
| ☐ | postscript | ☐ | latex | | indicate _____ |

26. Which media formats for audio are supported? 'Supported' refers to embedded representation in the content frame of the Learning Management System. *

- | | | | | | |
|--------------------------|------|--------------------------|-----------|--------------------------|----------------|
| ☐ | midi | ☐ | realaudio | ☐ | other, please |
| ☐ | mpeg | ☐ | wav | | indicate _____ |

27. Which media formats for images are supported? 'Supported' refers to embedded representation in the content frame of the Learning Management System. *

- | | | |
|--------------------------------------|--------------------------------------|--|
| ☐ <i>bmp</i> | ☐ <i>pict</i> | ☐ <i>other, please indicate</i> |
| ☐ <i>gif</i> | ☐ <i>png</i> | |
| ☐ <i>jpeg</i> | ☐ <i>tiff</i> | |

28. Which media formats for texts are supported? 'Supported' refers to embedded representation in the content frame of the Learning Management System. *

- | | | |
|-----------------|-----------------------------|-------------------------------|
| <i>css</i> | <i>sgml</i> | <i>other, please indicate</i> |
| <i>html</i> | <i>tab-separated-values</i> | |
| <i>plain</i> | <i>xml</i> | |
| <i>richtext</i> | | |

29. Which media formats for videos are supported? 'Supported' refers to embedded representation in the content frame of the Learning Management System. *

- | | | |
|------------------|------------------|-------------------------------|
| <i>mpeg</i> | <i>sgi-movie</i> | <i>other, please indicate</i> |
| <i>quicktime</i> | | |
| <i>msvideo</i> | | |

1.4 Course monitoring

30. Can online/offline times of courses be scheduled in the system e.g. is there a functionality for course availability control?

- | | |
|-------------------------------------|-----|
| ☐ <i>Yes</i> | (1) |
| ☐ <i>No</i> | (0) |

31. Which functionality for course registration is provided? ¹

- | | |
|---|-----|
| ☐ <i>Learner enrolls for a course</i> | (1) |
| ☐ <i>Instructor approves enrollment</i> | (1) |
| ☐ <i>Learner is enrolled for some course after he met all course prerequisites</i> | (1) |

32. Is there a functionality for user tracking?

- | | |
|-------------------------------------|-----|
| ☐ <i>No</i> | (0) |
| ☐ <i>Yes</i> | (1) |

33. If so: Does the user tracking allow any of the following? ²

- | | |
|--|-----|
| ☐ <i>The data is presented in tables.</i> | (1) |
| ☐ <i>The data is presented in charts.</i> | (1) |
| ☐ <i>The data can be exported.</i> | (1) |

34. If so: What kind of data can be tracked? ³

- | | |
|--|-----|
| ☐ <i>Hit rates of particular objects</i> | (1) |
| ☐ <i>Test results of particular learners</i> | (1) |
| ☐ <i>objects accessed by a particular learner</i> | (1) |

¹ Points are cumulated, this questions yields up to 3 points.

² Points are cumulated, this questions yields up to 3 points.

³ Points are cumulated, this questions yields up to 3 points.

1.5 Communication

35. How is synchronous communication supported? By ...⁴

- ☐ Chat (2)
- ☐ Video conferencing (2)
- ☐ Audio conferencing (2)
- ☐ Whiteboards (2)
- ☐ Application sharing (2)
- ☐ Other, please indicate _____ (2)

36. How is asynchronous communication supported? By ...⁵

- ☐ e-mail (2)
- ☐ internal mail (2)
- ☐ Forums (2)
- ☐ Other, please indicate _____ (2)

37. Can external tools for communications be integrated to the system?

- ☐ No (0)
- ☐ Yes, please indicate _____ (1)

38. Does the system support RSS/blogging?

- ☐ Yes (2)
- ☐ No (0)

1.6 General look & feel of the system

39. What is the level of customization of the layout of the system e.g does it employ style sheets?

- ☒ a lot of customizations can be done (2)
- ☐ only few things can be customized (1)
- ☐ No customization (0)

40. Can users personalise the system layout, e.g. change the skin of the system?

- ☒ Yes (1)
- ☐ No (0)

41. Is it possible to customize the login page?

- ☐ Yes (2)
- ☐ No (0)

1.7 Permissions handling

42. How are permissions handled?*

- ☐ Access control lists
- ☐ Role based access control
- ☐ Other, please indicate _____

⁴ Points are cumulated, this questions yields up to 12 points.

⁵ Points are cumulated, this questions yields up to 8 points.

43. Please describe the handling of permissions in a few sentences.*

44. How do you rank the quality of the permission system?

- ☐ Very Good/ Good (2)
- ☐ OK (1)
- ☐ Sufficient/ Bad (0)

45. How can users be organized into groups?

- ☐ Very easy/ Good (2)
- ☐ Ok (1)
- ☐ Sufficient / Not easy (0)

1.8 Other features

46. Is it possible to use any encryption functionality e.g. SSL or the like, for data transfer?

- ☐ Yes (2)
- ☐ No (0)

47. Is there a functionality implemented to handle payment?⁶

- ☐ No (0)
- ☐ invoice (1)
- ☐ automatic debit transfer system (1)
- ☐ other, please indicate _____ (1)

48. Can users annotate to the learning content?

- ☐ Yes (1)
- ☐ No (0)

49. Can users share annotations?

- ☐ Yes (1)
- ☐ No (0)

50. How many languages are supported?

- ☐ One (1)
- ☐ Two - Five (2)
- ☐ Six – Ten (3)
- ☐ Ten – Fifteen (4)
- ☐ Sixteen or more (5)

51. Is there some feature for the management of intellectual property rights?

- ☐ Yes (2)
- ☐ No (0)

52. Does the system support Semantic Web features?

- ☐ Yes (2)
- ☐ Only partially (1)
- ☐ No (0)

⁶ Points are cumulated, this questions yields up to 3 points.

53. Is the system LDAP-capable?

- Yes (2)
No (0)

2 Maintainability**2.1 Quality of technical documentation****54. Is there documentation for developers?**

- ☐ Yes, multilingual. Please indicate _____ (2)
☐ Yes in english (1)
☐ No (0)

55. Please indicate the quality of the developer documentation.

- ☐ Very good / Good (2)
☐ OK (1)
☐ Bad quality / non existant (0)

2.2 Scalability**56. What is the maximum number of active users of one known installation?**

- ☐ Less than 500 users (1)
☐ 500 – 1.000 users (2)
☐ 1.000 – 5.000 users (3)
☐ more than 5.000 users (4)

57. What is the maximum number of courses within one known installation?

- ☐ Less than 50 courses (1)
☐ 50 – 150 courses (2)
☐ more than 150 courses (3)

58. Is it possible to administrate different clients in one installation? Please indicate whether the system is able to manage different customers in the same instance of the Learning Management System.

- ☐ Yes (2)
☐ No (0)

59. Can the system grow horizontally or should it run only on a single server?

- ☐ Yes, the system can grow horizontally. (2)
☐ No, the system should be run on a single server. (0)

60. Please rank the Learning Management Systems' Reliability.

- ☐ Very reliable (2)
☐ Reliable (1)
☐ Not very reliable (0)

2.3 Extensibility

61. Are there documented mechanisms for the extension of features in the development process?

- ☐ Yes (1)
☐ No (0)

62. Is there a documented extensibility concept i.e. a plug-in concept?

- ☐ Yes (1)
☐ No (0)

63. Is a defined API available?

- ☐ Yes (2)
☐ No (0)

64. Is the system developed according to an object-oriented approach?

- ☐ No (0)
☐ Yes, in parts. (1)
☐ Yes, fully. (2)

65. Do developers stick to the coding conventions defined for the LMS?

- ☐ Yes, and they are normally respected in the source code (2)
☐ Partly, but they are sometimes respected in the source code (1)
☐ No (0)

66. Please rate the quality of the source code of the project:

- ☐ Very good (4)
☐ Good (3)
☐ OK (2)
☐ Not well designed (1)
☐ Bad quality ("spaghetti code") (0)

67. Is a methodology for managing user requirements employed?

- ☐ No (0)
☐ Yes, please indicate _____ (1)

68. Is a bug reporting system employed by the developer team?

- ☐ No (0)
☐ Yes (1)

69. Is a CVS (or a similar Version Control System – e.g. Subversion) used?

- ☐ No (0)
☐ Yes (1)

70. How many full stable versions of this Learning Management System have been released? _____*

2.4 Adaptability / standard compliance

71. Is the system modularized?

- ☐ No (0)
☐ Yes, in parts. Please indicate in which _____ (1)
☐ Yes, fully. (2)

72. Is the Learning Management System compliant to SCORM 1.2?

- ☐ No (0)
☐ Yes, in parts. Please indicate in which _____ (2)
☐ Yes, fully. (3)

73. Is the Learning Management System compliant to AICC?

- ☐ No (0)
☐ Yes, in parts. Please indicate in which _____ (2)
☐ Yes, fully. (3)

74. Does the system conform to the Learning Object Metadata standard?

- ☐ No (0)
☐ Yes, in parts. Please indicate in which _____ (2)
☐ Yes, fully. (3)

75. Does the system conform to IMS-QTI?

- ☐ No (0)
☐ Yes, in parts. Please indicate in which _____ (2)
☐ Yes, fully. (3)

76. Does the system support IMS BLearning Design?

- ☐ Yes (2)
☐ No (0)

3 Usability

3.1 User documentation

77. Is there an online help delivered with the system?

- ☐ Yes (5)
☐ No (0)

78. Is there documentation for users?

- ☐ Yes, multilingual. Please indicate _____ (2)
☐ Yes in english (1)
☐ No (0)

79. Please indicate the quality of the user documentation.

- ☐ *Very good / Good* (2)
☐ *OK* (1)
☐ *Bad quality / non existant* (0)

80. Is there documentation for authors?

- ☐ *Yes, multilingual. Please indicate _____* (2)
☐ *Yes in english* (1)
☐ *No* (0)

81. Please indicate the quality of the documentation for authors.

- ☐ *Very good / Good* (2)
☐ *OK* (1)
☐ *Bad quality / non existant* (0)

82. Is there documentation for system administrators?

- ☐ *Yes, multilingual. Please indicate _____* (2)
☐ *Yes in english* (1)
☐ *No* (0)

83. Please indicate the quality of the administrator documentation.

- ☐ *Very good / Good* (2)
☐ *OK* (1)
☐ *Bad quality / non existant* (0)

3.2 Generating content**84. Please rate the usability of the authoring functionality. How easy is generating and modifying learning content?**

- ☐ *Learning content can be generated and modified easily.* (4)
☐ *Learning content can be generated and modified but it takes some time.* (3)
☐ *It is hard to generate and modify learning content.* (2)
☐ *No it is not possible in the system, but content can be imported* (1)

85. Please rate the ease of use of the web authoring functionality for the generation and modification of tests?

- ☐ *Tests can be generated and modified easily within the system.* (3)
☐ *Tests can be generated and modified but it takes some time.* (2)
☐ *It is hard to generate and modify a test.* (1)
☐ *You cannot generate and modify a test.* (0)

3.3 Level of expertise needed**86. Please indicate the level of expertise that is required for using the program as an administrator.**

- ☐ *The system is easy to use, little expertise is required.* (2)
☐ *The system is complex and rich in features thus high expertise is required.* (1)
☐ *The system is hard to understand and difficult to use, you have to build high expertise to use it.* (0)

87. Please indicate the level of expertise that is required for using the program as an author.

- ☐ The system is easy to use, little expertise is required. (2)
- ☐ The system is complex and rich in features thus high expertise is required. (1)
- ☐ The system is hard to understand and difficult to use, you have to build high expertise to use it. (0)

88. Please indicate the level of expertise that is required for using the program as a tutor.

- ☐ The system is easy to use, little expertise is required. (2)
- ☐ The system is complex and rich in features thus high expertise is required. (1)
- ☐ The system is hard to understand and difficult to use, you have to build high expertise to use it. (0)

89. Please indicate the level of expertise that is required for using the program as an user.

- ☐ The system is easy to use, little expertise is required. (2)
- ☐ The system is complex and rich in features thus high expertise is required. (1)
- ☐ The system is hard to understand and difficult to use, you have to build high expertise to use it. (0)

3.4 Other

90. Can some training material be obtained? Some material besides the 'normal' help.

- ☐ No (0)
- ☐ Yes, it can be purchased at _____ (1)
- ☐ Yes, it is free and can be obtained at _____ (2)

91. Is the system easy to navigate?

- ☐ Very easy / Easy (2)
- ☐ Ok (1)
- ☐ Sufficient / Not easy (0)

92. Please rank how easy the layout of the system can be customized for any organisations look and feel?

- ☐ Very easy / Easy (2)
- ☐ OK / It takes some time (1)
- ☐ No customization (0)

93. Is the permission system flexible?

- ☐ Very flexible / Good (2)
- ☐ Ok (1)
- ☐ Sufficient / Not flexible (0)

94. Is the permission system simple and easy to understand?

- ☐ Very easy / Easy (2)
- ☐ Ok (1)
- ☐ Sufficient / Not easy (0)

95. Can grading be done easily online?

- ☐ Very easy / Easy (2)
- ☐ Ok / It takes some time (1)
- ☐ no functionality is offered to grade online (0)

96. Is it compliant with any accessibility specifications (e.g. W3C WAI)?

- ☐ Yes
☐ No

(2)
(0)

97. Is there any reporting functionality?

- ☐ Yes
☐ No

(2)
(0)

4 Support quality

NOTICE: All of the following questions are not quantified. Their answers provide input for the verbal description of the LMS.

98. Can the operating institution buy some support from a business company on the basis of a contract and warranty?

- ☐ Yes
☐ No

99. Is there a business company for implementing, hosting etc.?

- ☐ No
☐ Yes, recommended is _____

100. Does the core team provide any assistance or services like installation or training on a regular basis?

- ☐ Yes, please specify _____
☐ No

101. Is the support from the core team responsive?

- ☐ Yes, you get your advice and fixes very promptly.
☐ The team is kind of responsive. Usually you have to ask twice.
☐ No, you have to squeeze advice and fixes out of the team in a trying process.

102. How long does it take to get an answer to a request in the forum?

- ☐ Few hours
☐ About One day
☐ About Three days
☐ About A week
☐ More than a week

5 Total Cost of Ownership

NOTICE: All of the following questions are not quantified. Their answers provide input for the verbal description of the LMS.

5.1 Type of users

103. What is the predominant type of user?

- | | |
|------------------------------|---|
| Universities | % |
| Small and medium enterprises | % |
| Industry | % |
| Schools | % |
| non-profit organizations | % |
| other, please indicate _____ | |

104. How many important and prestigious customers are enlisted amongst the users of the system?

- | | |
|-----------------------------|-----|
| <i>Just small customers</i> | (1) |
| <i>Few big names</i> | (2) |
| <i>A lot if big names</i> | (3) |

105. Please estimate the number of users. _____

106. Can we get in contact with one of the Learning Management System real world users? _____

5.2 Financial stability

107. How many man years of full time programming and coordination work have been done? Please indicate _____

108. Since when? MM/YYYY _____

109. Is you core team funded?

- ☐ No
- ☐ Yes, until when?

5.3 One time cost

110. What are the hardware requirements of the Learning Management System? Please indicate _____

111. What are the software requirements of the Learning Management System? Please indicate _____

112. Are there any additional products needed? _____

113. What time does it take to get the System up and running?

5.4 Recurring costs

114. What do you think is the time it takes your institution to run your installation?

115. How many hours of training on the Learning Management System do you advise for an administrator? Please estimate in 00:00_____

116. How many hours of training on the Learning Management System do you advise for an author? Please estimate in 00:00_____

117. How many hours of training on the Learning Management System do you advise for a tutor? Please estimate in 00:00_____

118. How many hours of training on the Learning Management System do you advise for a user? Please estimate in 00:00_____

119. How many hours of administration are needed to run your Learning Management System at the server level? Please estimate in 00:00_____

120. How many hours of administration are needed to run your Learning Management System at the program level? Please estimate in 00:00_____