Centre for Learning Sciences and Technologies (CELSTEC)
Open University of the Netherlands

TENCompetence Handbook on Integrated Quality Assurance

Version 3.0

Internal Deliverable 1.6 (update for DIP-3)
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<td>• Added mid-term decisions and changes</td>
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Introduction

This Handbook contains information that is required for the proper participation in the TENCompetence project, and to promote quality assurance.

Quality Assurance (QA) in TENCompetence is not a one-time activity, but is fully integrated into the project structure and procedures. More specifically, the following QA aspects are covered in this Handbook:

1. Responsibilities of all those involved in project activities (chapter 1)
2. Regular internal and external monitoring and reporting procedures (chapter 3)
3. The definition of an assessment protocol for scientific, technology and valorisation outputs (chapter 4).
4. Internal Deliverable and Deliverable appraisal and submission procedures (chapter 5)
5. External project review procedure (chapter 6)
6. Overall project evaluation and impact assessment methodology (chapter 7)
7. Clearly defined software development standards and procedures (chapter 8).

This version of the Handbook covers the DIP-3 period (months 25-42), but being an ever-evolving document, updates may become available. The latest version of the Handbook is available electronically at http://hdl.handle.net/1820/993

We have decided to make this Handbook a document that can be read on its own, instead of referencing to other project- and Commission documents. This might however give rise to ambiguity. In such case, the order of prevalence is:

1. Contract document, including the DoW (highest level of prevalence)
2. Commission rules, e.g. as contained in manuals
3. Consortium Board decision
4. Consortium Agreement

Questions and suggestions for improvement of the Handbook can be sent to: eric.kluijf@ou.nl or peter.vanrosmalen@ou.nl
1. Consortium management structure, responsibilities and meetings

**Consortium management structure**

The TENCompetence project management structure is as follows:

![Project Management Structure Diagram]

Figure 1. Project Management structure

All major project roles are detailed below.

**Detailed responsibilities**

<table>
<thead>
<tr>
<th>Consortium Board</th>
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<tbody>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>The Consortium Board is the ultimate decision-making body of the Consortium. The representatives to the Consortium Board are of senior management level with the authority to commit their organisation to the decisions of the Consortium Board.</td>
</tr>
<tr>
<td><strong>Composition</strong></td>
</tr>
<tr>
<td>Each Party is entitled to send one voting representative to the Consortium Board. These representatives should be of senior management level with the authority to commit their organisation to the decisions of the Consortium Board. Each partner's representative on the Consortium Board will be responsible for the internal co-ordination of TENCompetence activities in their institution. The Consortium Board is Chaired by the Project Coordinator. The General Manager shall act as the secretary (without voting rights).</td>
</tr>
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</table>
Detailed tasks and responsibilities

The Consortium Board is the highest collective decision-making body. It decides on matters relating to:

- The overall project progress, supported by progress reports received from the Executive Committee.
- The preparation and final approval of the annual implementation plan prior to the submission to the Commission.
- All budget-related matters, including approval of the accounts for the past (financial) year, and approval of the budget for the annual implementation plan.
- The structure and restructuring of the work packages.
- Standards including, but not limited to: project standards and quality assurance; the TENCompetence assessment protocol; the technical standards and architecture; the scientific standards; and the valorisation approach.
- The appointment of the members of the Executive Committee.
- The acceptance of new parties as well as the exclusion of Parties.
- The alteration of the Consortium Agreement.
- The resolution of difficulties and disputes.
- The premature completion/termination of the Project.

The decisions of the Consortium Board in the Project-related matters are legally binding to all Parties.

Meetings

Each Party is entitled to send one voting representative to the Consortium Board. These representatives should be of senior management level with the authority to commit their organisation to the decisions of the Consortium Board. The meetings are Chaired by the Project Coordinator. The General Manager shall act as the secretary (without voting rights).

Ordinary meetings of the Consortium Board shall be convened at least twice a year. Extraordinary meetings of the Consortium Board may be convened either by the Chairperson or at the request of a quarter (25 percent) of the Work Packages Leaders or at the request of one third (⅓) of the Parties. Ordinary and extraordinary meetings of the Consortium Board shall constitute a quorum if more than half (1/2) of the Parties are present or duly represented by proxy. The Commission may participate as an observer at the meetings of the Consortium Board.

The General Manager shall convene the meeting and provide an agenda to all the Parties not later than fifteen (15) days in advance of the relevant Consortium Board meeting. The agenda must give all relevant background information to any proposed decision. No decision may be made in relation to any matter not mentioned in the agenda unless agreed by unanimous consent of all the Parties present, or duly represented by proxy.

In extraordinary cases the Consortium Board may take decisions through its chairperson consulting with all members via teleconference and/or via e-mail, phone, etc. These decisions must be ratified by an ordinary meeting and shall be made available to all Parties.

Minutes of the meetings shall be submitted to all members without delay. The minutes shall be considered as accepted by the Parties if, within fifteen (15) calendar days from receipt, no Party has objected in a traceable form to the coordinator.

Voting

All decisions of the Consortium Board shall be taken by simple majority. In case of draw the Project Co-ordinator, who is the Chairperson of the Consortium Board, will decide.

A Party may issue its veto only in the case of decisions:

a) to accept a new party in the Project if a substantial threat to its commercial or strategic interests is likely to exist which cannot be resolved by any other measure,
b) which affects significantly its budget and workload set down in the Description of Work (Contract, Annex I).

A veto in accordance to (a) may be overruled by the Consortium Board by unanimous vote of all the non-objecting Parties as far as these Parties represent more than two third (⅔) of all Parties. A veto in accordance to (b) may be overruled by the Consortium Board with votes of three quarters (¾) of the Parties present or duly represented.

<table>
<thead>
<tr>
<th>Member contact details</th>
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### Executive Committee

#### Summary

The Executive Committee is responsible for the day-to-day management of the project and shall report and be accountable to the Consortium Board. This involves assuming overall responsibility for liaison between the Parties in relation to the Project, for analysing and approving the results, for proper administration of the project and for implementation of the provisions contained in the Consortium Agreement.

#### Composition

The Executive Committee comprises the Chairperson of the Consortium Board who will also be the Chairperson of the Executive Committee, and all the Work Package leaders. The General Manager will act as the secretary for the Executive Committee.

Members of the Executive Committee can be duly represented by proxy, provided the representative has the same mandate regarding decisions that are taken during the meeting as the person he/she is representing.
Detailed tasks and responsibilities

Under the control of, and in compliance with the decisions of the Consortium Board, the Executive Committee shall co-ordinate the Project. The Executive Committee assumes overall responsibility towards the Consortium Board for liaison between the Parties for analysing and approving the results generated under Work Packages and/or Subcommittees. The Executive Committee shall be specifically responsible for:

- Taking the necessary decisions in between the meetings of the Consortium Board.
- Supporting the Co-ordinator in fulfilling obligations towards the Commission.
- Ensuring that all work meets functional requirements.
- Providing administrative, financial, legal and logistical support – through the Secretariat - for activities that surpass the level of individual Work Packages.
- Providing project management in relation to the activities of the subcommittees on technical, financial and/or exploitation/dissemination issues, as applicable.
- Supporting the individual Work Package Leaders in progress monitoring through the administration of Internal Deliverables and deadlines.
- Supporting the Board in monitoring progress through the compilation of internal progress reports, based on inputs received from the Local Project Co-ordinators and Work Package Leaders.
- Supporting the Board in progress and financial reporting to the Commission through the compilation of annual progress reports on the basis of inputs received from Work Package Leaders, and the Chairs of the Subcommittees and the Board itself.
- Supporting the Board in compiling the detailed annual Implementation Plan, on the basis of inputs from the Work Package Leaders, the Local Project Co-ordinators, the Chairs of the Subcommittees and the Board itself, for approval by the Consortium Board prior to its submission to the Commission.
- Reviewing and proposing to the Consortium Board budget transfers in accordance with the contract and the annual implementation plan.
- Proposing changes in work sharing, budget and participants to the Consortium Board.
- Making proposals to the Parties (other than a Defaulting Party) to serve notices on a Defaulting Party and to assign the Defaulting Party's tasks to specific entities.

The Executive Committee shall have the right to set up Subcommittees to advise and support the Executive Committee in the proper management and co-ordination of the Project. These Subcommittees have an advisory role only. The following Subcommittees will be set up at the start of the project:

- Project Standards and Quality Assurance Subcommittee
- Technical standards and Architecture Subcommittee
- Scientific Subcommittee
- Valorisation Subcommittee.

Meetings

The Executive Committee may meet both physically and virtually. It shall meet at least quarterly at the request of its chairperson. Extraordinary meetings may be called at any other time at the request of its chairperson, two of its members or at the request of a quarter (¼) of the Parties. The Commission may participate as an observer at the meetings of the Executive Committee.

Ordinary meetings shall be convened by the chairperson with at least fifteen (15) calendar days prior notice including an agenda. Ordinary and extraordinary meetings of the Executive Committee shall constitute a quorum if at least half of the voting members are present or duly represented by proxy.

Any decision requiring a vote at a Executive Committee meeting must be identified as such on the pre-meeting agenda, unless there is an unanimous agreement to vote on a decision at that meeting and three-quarters (¾) of the members of the Executive Committee are present or duly represented by proxy.
Minutes of the meetings shall be transmitted to the members of the Executive Committee without delay. The minutes shall be considered as accepted, if within fifteen (15) calendar days from receipt no member has objected in a traceable form to the Co-ordinator. Subsequent, the minutes of the meetings shall be submitted to all Parties.

Voting

All decisions of the Executive Committee shall be taken by simple majority. In case of draw the Project Co-ordinator, who is the Chairperson of the Executive Committee, will decide.

Member contact details

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<tr>
<th>WP</th>
<th>Contact Information</th>
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<tr>
<td>WP1</td>
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<tr>
<td>WP2</td>
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<td>WP3</td>
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<td>WP7</td>
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<td>Hannover</td>
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<td>WP9</td>
<td>Open Universiteit Nederland</td>
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<td>WP10</td>
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Project Standards and Quality Assurance Subcommittee

Summary

The Project Standards and Quality Assurance subcommittee guides the work package activities and the delivery of internal deliverables and deliverables with quality procedures. The Subcommittee has an advisory role only.

Composition

Each Party is represented by one member in this subcommittee, which is chaired by a member of the Executive Committee. If appropriate and required, besides the partners, also individual experts may be invited as member.
Detailed tasks and responsibilities

The Project Standards and Quality Assurance subcommittee will:

- Advise the Executive Committee on the quality assurance procedures and criteria to be included in the Project Handbook and Quality Assurance Plan that will be compiled under the coordination of WP1, and will be updated for each project cycle.
- Advise the Executive Committee on any required additional quality assurance procedures and criteria during project execution.
- Monitor the effectiveness of the implemented quality assurance procedures and criteria in producing and assessing internal deliverables, deliverables and annual implementation plans.

The Executive Committee may confer additional tasks and responsibilities to the Subcommittee, while the Subcommittee may propose more detailed tasks and responsibilities for itself to the Executive Committee for approval.

Meetings

No meeting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

Voting

No voting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

Member contact details

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Technical Standards and Architecture Subcommittee

Summary

The Technology Standards and Architectures Subcommittee advises the Executive Committee on technological standards and architectural constraints for the software to be developed in the project. The Subcommittee has an advisory role only.

Composition

The subcommittee consists of one member of each partner, chaired by a member of the Executive Committee. If appropriate and required, besides the partners, also individual experts may be invited as member.

Detailed tasks and responsibilities

Each software component developed in the project should meet the standards and constraints agreed upon by the Executive Committee. All standards will be open standards or specifications. The Technology Standards and Architectures subcommittee will:

- Advise the Executive Committee on technological standards and architectural constraints for the software to be developed in the project under WP3, WP5, WP6, WP7 and WP8.
- Review software deliverables (from WP3, WP5, WP6, WP7 and WP8) in view of these standards and constraints as part of quality assurance, and advise the Executive Committee accordingly.
- Review annual implementation plans (especially for WP5, WP6, WP7 and WP8) in view of these standards and constraints as part of quality assurance, and advise the Executive Committee accordingly.

The Executive Committee may confer additional tasks and responsibilities to the Subcommittee, while the Subcommittee may propose more detailed tasks and responsibilities for itself to the Executive Committee for approval.

Meetings

No meeting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

Voting

No voting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

Member contact details

<table>
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<tr>
<td>Gottfried Wilhelm Leibniz Universität Hannover</td>
<td>vacant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Scientific Subcommittee

**Summary**

The Scientific Subcommittee advises the Executive Committee on the scientific criteria for project activities and outcomes. The Subcommittee has an advisory role only.

**Composition**

The Scientific Subcommittee comprises a maximum of seven members from the partners, including the Chair who is the Project Coordinator. Members are selected on the basis of their high reputation in one or more fields relevant to the project. If appropriate and required, besides the partners, also individual experts may be invited as member.

**Detailed tasks and responsibilities**

The Scientific Subcommittee will:
- Set standards for scientific publications and technology output.
- Review project deliverables as measured against scientific criteria
- Review annual implementation plans in view of the scientific standards as part of quality assurance, and advise the Executive Committee accordingly.

The Executive Committee may confer additional tasks and responsibilities to the Subcommittee, while the Subcommittee may propose more detailed tasks and responsibilities for itself to the Executive Committee for approval.

**Meetings**

No meeting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

**Voting**

No voting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

**Member contact details**

<table>
<thead>
<tr>
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<tr>
<td>Agora</td>
<td>vacant</td>
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</table>

**Valorisation Subcommittee**

**Summary**

The Valorisation Subcommittee advises the Executive Committee on the planning, execution and monitoring of valorisation activities in WP9 and WP10. The Subcommittee has an advisory role only.

**Composition**

The members of the Subcommittee are representing Partners or Associate Partners. Each partner is represented by one member in this Subcommittee, which is chaired by a member of the Executive Committee. The Subcommittee has an advisory role only.
## Detailed tasks and responsibilities

The Valorisation Subcommittee will:
- Advise on the TENCompetence impact criteria, valorisation strategies and underlying business models.
- Advise on the relevance of the research and development activities to meet the public and private sector needs (e.g. towards WP2).
- Advise on structuring relations with the wider professional community in the various sectors of the world of lifelong competence development (schools, universities, training companies, libraries, different user organisations, etc.; WP9 and WP10)
- Review annual implementation plans in view of the impact criteria and valorisation strategies as part of quality assurance (especially for WP9 and WP10), and advise the Executive Committee accordingly.
- Review project outcomes and deliverables of WP9 and WP10 as measured against the impact criteria and valorisation strategies.

The Executive Committee may confer additional tasks and responsibilities to the Subcommittee, while the Subcommittee may propose more detailed tasks and responsibilities for itself to the Executive Committee for approval.

## Meetings

No meeting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

## Voting

No voting rules have been defined beforehand. The Subcommittee may propose such rules to the Executive Committee for approval.

## Member contact details

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TENCompetence Secretariat

Summary

The Secretariat provides administrative, financial, legal and logistical support to the Consortium Board; to the Executive Committee; to the Project Co-ordinator in his role as intermediary to the Commission with communication and reporting activities; to the Advisory Committees; and to the Work Package Leaders where activities surpass that of individual Work Packages. The Secretariat carries out its activities as part of WP1.

Composition

The Secretariat comprises a General Manager, a Project Officer for interfacing with the Work Package Leaders, and a Financial Administrator. The General Manager assists the Project Co-ordinator in all of his tasks and is the main day-to-day contact person for the European Commission for administrative, financial, legal and logistical issues that are standard procedures. For strategic issues the Project Co-ordinator will remain the contact person for the commission.

Detailed tasks and responsibilities

- Compile a Project Handbook, detailing: project structure, policies and procedures for reporting and submitting deliverables; quality assurance standards and procedures; and a gender mainstreaming policy. The first version of the Handbook will be compiled within six months from the start of the project, and updates will be produced for each project cycle.
- Liaise with the Local Project Co-ordinators to receive periodic (activity and management) and final reports.
- Monitor Work Package performance based on the received periodic progress and financial reports, in support of the Executive Committee.
- Assist the Project Co-ordinator to manage risks and take corrective actions as necessary.
- Coordinate drafting the Annual Implementation Plans and related budgets for approval by the Project Co-ordinator and subsequently the Executive Committee, and final ratification by the Consortium Board.
- Monitor the project’s gender mainstreaming policy.
- Monitor the project’s IPR policy (open source licences, creative common licences, distribution of deliverables and software).
- Monitor project contacts between TENCompetence and external organisations (industrial, trade, governmental, or institutional).

Member contact details

<table>
<thead>
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</tr>
</tbody>
</table>
### Project Co-ordinator

**Summary**

The Project Co-ordinator, as the intermediary to the Commission, is responsible for project management and will lead the scientific research and development in TENCompetence. The Project Co-ordinator will chair the Consortium Board, the Executive Committee and the Scientific Subcommittee. The TENCompetence Secretariat supports the Project Co-ordinator in the day-to-day co-ordination, and in all administrative tasks.

**Detailed tasks and responsibilities**

The Project Co-ordinator is responsible for the following:

- Overall management of the Project with the support from the Secretariat.
- Chairing the Executive Committee, the Consortium Board, and the Scientific Subcommittee.
- Preparing meetings and decisions of the Consortium Board and the Executive Committee.
- Collecting and preparing, with support from the Executive Committee, statements, including financial audit certificates, from the partners for transmission to the Commission.
- Ensure prompt delivery of all hardware, software and data identified as deliverable items in the Contract or requested by the Commission for reviews and audits, including the results of the financial audits prepared by independent auditors.

In addition, the Co-ordinator is authorised:

- In case there exist serious concerns regarding the financial soundness of a partner, to require a letter of comfort to prove that the partner is able to fulfil the financial obligations with regard to the Contract and this Consortium Agreement. Until this is provided, the Co-ordinator is entitled to refuse the disbursement of the financial contributions of the Commission to this Party.
- To retain any payment if a partner is late in submitting or refuses to provide deliverables as defined in the Description of Work and/or Consortium Agreement.

**Contact details**

| Open Universiteit Nederland | Rob Koper | rob.koper@ou.nl | +31 45 5762657 |

### Work Package Leader

**Summary**

The Work Package Leader is responsible for the co-ordination of activities and the production of deliverables of the Work Package. The Work Package Leader cooperates with the Executive Committee to facilitate day-by-day project management on Work Package level.

**Detailed tasks and responsibilities**

The Work Package Leader is responsible for:

- Compiling a detailed work plan for each project cycle.
- Coordinating the activities of the partners participating in the Work Package.
- Monitor progress and securing quality of internal deliverables and deliverables.
- Keep participating partners informed on Work Package progress.
- Keep the Coordinator, the Consortium Board and the Executive Committee informed on the current status of activities, internal deliverables and deliverables through the Activity Reports and Internal Cost Report.
- Contribute to the compilation of the Annual Implementation Plans for the Work Package.

**Contact details:** see the Executive Committee.
## General Manager

**Summary**

The General Manager heads the TENCompetence Secretariat, and serves as Secretary to the Consortium Board and the Executive Committee. The General Manager can represent the Project Coordinator as chair of the Executive Committee.

**Detailed tasks and responsibilities:**

- Head the Secretariat
- Serve as Secretary to the Consortium Board
- Serve as Secretary to the Executive Committee

**Contact details**

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</table>

## Local Project Co-ordinator

**Summary**

Each partner will appoint a Local Co-ordinator. The Local Project co-ordinator is responsible for the administrative and financial issues. The Local Project co-ordinator cooperates with the Executive Committee to facilitate day-by-day project management on partner level.

**Detailed tasks and responsibilities**

- Be the main contact point for all administrative and financial issues for the partner.
- Collect and send all information required for the activity and financial reports to the Secretariat.

**Contact details**

<table>
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<tr>
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</tbody>
</table>
2. Project meetings and workshops

In TENCompetence we aim to organise a combined project meeting and open workshop each quarter, to be organised by one of the partners. The format usually is to have a 3-day closed project meeting, and a 2 day open workshop.

The purpose of the closed project meeting is to:
- Meet with the Board or the Executive Committee, depending on the issues at hand
- Allow WP-partners to meet face to face in working sessions
- Coordinate activities between WPs
- Monitor and assess overall progress through formal and informal discussions between the Project Coordinator and the WP-leaders.

The purpose of the open workshop is to:
- Generate research output by inviting researchers from within and outside the project to meet and present scientific papers
- Generate dissemination outcomes by organising activities with and for (prospective) associate partners and general stakeholders.

Attendance closed meetings
All major partners should attend the closed meetings with at least three staff members. All WP-leaders should be present, and are supposed to have prepared their meetings. The smaller partners may attend infrequently/with less people.

Members of the Board and the Executive Committee can be duly represented by proxy, provided the representative has the same mandate regarding decisions that are taken during the meeting as the person he/she is representing.

Planning and organising closed project meetings
The agenda for the closed meeting is drawn up by the Secretariat, and sent around as a draft to the WP-leaders for comments, and to the hosting partner for logistical preparations. The logistics are arranged by the hosting partner.

Planning and organising open workshops/conferences
The hosting partner is responsible for organising the open workshop, including organising a call for papers, their collection, assessment and selection, and subsequent publication of the proceedings and - preferably - a special issue of one of the endorsed journals (see chapter 4 for the list of endorsed journals).
The suggested time plan for organising a conference is as follows:

<table>
<thead>
<tr>
<th>Months to go till workshop</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Draft Call for Papers, and check with the Secretariat (example below)</td>
</tr>
<tr>
<td>6</td>
<td>Arrange for journal special issue publication: see chapter 3 for acceptable journals</td>
</tr>
<tr>
<td>5</td>
<td>Decide on preferred meeting and workshop venue</td>
</tr>
<tr>
<td>5</td>
<td>Publish call for papers and details on acceptance policy, registration policy, venue and fee (see below for an example): put all info on a dedicated conference website and distribute info through contacts</td>
</tr>
<tr>
<td>5</td>
<td>Compile a Programme Committee for paper review: should be of sufficient scientific calibre</td>
</tr>
<tr>
<td>5-3</td>
<td>Collect and distribute papers to reviewers. Proposed review procedure and form below</td>
</tr>
<tr>
<td>5-3</td>
<td>Confirm logistics: conference venue, nr. of rooms, internet access, catering</td>
</tr>
<tr>
<td>3</td>
<td>Confirm to potential participants: conference venue, hotels info, travel suggestions, .......... put also on conference website</td>
</tr>
<tr>
<td>2</td>
<td>Inform authors whether their papers have been accepted for the conference</td>
</tr>
</tbody>
</table>

Example of a scientific conference announcement

**TENCompetence Open Workshop on Current research on IMS Learning Design and Lifelong Competence Development Infrastructures**

**Location:** ............

**Venue:** ............

**Start:** <date>, <time>

**End:** <date>, <time>

**Introduction**

This workshop is organized by the EU 6th Framework Integrated Project TENCompetence. The objective of the workshop is to identify and analyse current research and technologies in the fields that provide the building blocks for the development of an open source infrastructure that contains all the services needed to support individuals, teams and organisations to (further) develop their competences, using all the distributed knowledge resources, learning activities, units of learning and learning routes/programmes that are available online.

**Theme**

The main theme of this workshop is to provide an overview on current research on IMS Learning in
relation to competence development. It includes, but is not limited to:

- Development of LD tools and architectures, eg, editors, content management systems, runtime engines.
- Advanced applications of LD (eg, in gaming, collaborative learning, competence development, ePortfolios)
- Research and technology development to support users in creating an adequate learning design (e.g. software agents or design aids)
- Research to evaluate the ability of the LD specification to integrate the following criteria: completeness, pedagogical flexibility, personalization, reusability, formalization, etc.
- Evaluations of the use of LD in practice, including the integration of a variety of specifications in a learning environment
- Studies defining the current state-of-the-art in learning design, or positioning LD in the wider context of learning, training and instruction
- Learning Design for formal and informal Lifelong Learning and Competence Development

Other topics

Other topics relevant for the workshop include, but are not limited to:

- Knowledge Management issues related to competence development, lifelong learning or HRM
- Competence description frameworks for professions
- Monitoring (changes in) competences in professions * Competence assessment and learner positioning
- Methods and tools to support learners in distributed environments, peer tutoring, teaching, mentoring, coaching
- Personal data, profiles, and portable ePortfolios for competence registration
- Technologies for the discovery of suitable learning resources
- Collaborative filtering technologies, recommend or systems for learning
- Use of language technologies to support learning processes
- Navigational support to users in a learning network
- Authoring, discovery, advise and/or exchange of knowledge resources, learning activities or units of learning
- Open standards and specifications usable for learning networks
- Social software usable for lifelong competence development
- Dynamic discovery of, and collaboration between, informal learning groups
- New social theories and practices which have implications for Competence Development
- Models and tools supporting work-based learning
- Personalised and collaborative trails using knowledge resources or learning activities
- Mobile support for lifelong competence development
- Semantic Web and lifelong competence development
- Gender issues related to the design of educational applications

Workshop Language

English

Publication of Proceedings

All papers accepted for the workshop will be published in the workshop proceedings with ISBN ........ and will be distributed to the participants after the workshop. Selected papers will be invited to submit a full paper (......... words) for a special issue of the ........... devoted to the outcomes of the workshop.

Workshop Chair

Rob Koper (Netherlands) - Chair
Josep Blat (Spain) – Co-chair

Programme Committee

<a selection of senior staff from the organising partner and TENCompetence>
Barry Harper, Australia
Joachim Hasebrook, Germany
Roger Hartley, UK
Local organising Committee contact details
Address: ............
name 1: (email)
name 2: (email)
Tel: +(   )
Fax: +(   )

SUBMISSION GUIDELINES

Deadline for paper submissions ............

During the workshop it will be possible to present a paper of 2000 words. These submissions may include Research, Technology Development, Review and Application but are not limited to these only. Furthermore, participants can submit a proposal for a demonstration session to demonstrate relevant software.

Electronic submissions should be forwarded as a Portable Document Format (.pdf) attachment to: ............... All submissions must be papers of 2000 words that are formatted according to the publication guidelines ............... (note: for an example see the author instructions of the Sofia call at http://ld06.uni-sofia.bg/CFP_Instructions%20for%20Authors.pdf).

All authors will be informed of the results from the reviews of their papers, including if the papers were accepted for the publication in the workshop proceedings latest ............

Registration

Registration form may be filled in and sent as an email attachment to: ............. @ ..........

Deadline for the registration: ............

Fees

......................... (note: this is obviously up to you to decide. The standard policy is that costs for materials, lunches etc. are paid through a small conference fee).

Location
The main conference venue will be at .........................

Accommodation

..........................................................

Proposed article review procedure for conference papers

Each paper is to be reviewed by at least two reviewers (A and B) from the programme committee. The reviewers review the paper independently, using the form below to report back to the chair.

The possible review recommendations are:
- rr1: Definitely accept
- rr2: Minor revisions required before accept
- rr3: Major revisions required before accept
- rr4: Definitely reject.

The table below lists all possible outcomes and the action to be taken. In case of large differences between the two reviewers, a third reviewer will need to provide the deciding recommendation. *Reviewing such cases thus takes extra time, which should be planned for!*

<table>
<thead>
<tr>
<th>Reviewer A</th>
<th>rr1</th>
<th>rr2</th>
<th>rr3</th>
<th>rr4</th>
</tr>
</thead>
<tbody>
<tr>
<td>rr1</td>
<td>Accept</td>
<td>Accept</td>
<td>Third reviewer decides</td>
<td>Third reviewer decides</td>
</tr>
<tr>
<td>rr2</td>
<td>Accept</td>
<td>Accept</td>
<td>Third reviewer decides</td>
<td>Third reviewer decides</td>
</tr>
<tr>
<td>rr3</td>
<td>Third reviewer decides</td>
<td>Third reviewer decides</td>
<td>Reject</td>
<td>Reject</td>
</tr>
<tr>
<td>rr4</td>
<td>Third reviewer decides</td>
<td>Third reviewer decides</td>
<td>Reject</td>
<td>Reject</td>
</tr>
</tbody>
</table>
Example of an article review form.

<table>
<thead>
<tr>
<th>Reviewer Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliation, Country</td>
<td></td>
</tr>
<tr>
<td>Title of the paper:</td>
<td></td>
</tr>
</tbody>
</table>

**Paper Review Form**

TENCompetence Project Coordination at: Open University of the Netherlands  
Valkenburgerweg 177, 6419 AT Heerlen, The Netherlands  
Tel: +31 45 5762624– Fax: +31 45 5762800

Please rate the following 4 points

1. **Relevance** of the paper with regard to the Call for Papers [1 (very low) - 6 (very high)]:  

Please explain your rating:

2. **Technical quality** of the paper [1 (very low) - 6 (very high)]:  

(E.g.: Is the paper technically sound? Does it carefully evaluate the strengths and limitations of its contributions? Are its claims backed up? Does the paper offer a new form of evidence in support of or against a well-known technique? Does it offer a theoretical analysis of prior experimental results? Related Work?)  

Please explain your rating:

3. **Presentation quality** of the paper [1 (very low) - 6 (very high)]:  

(E.g.: Is the paper well written? Does it motivate the research? Are the results described and evaluated? Is the paper organized in a logical fashion? Is the paper written in a manner that makes it accessible to most educators and/or educational system developers? Is the paper written in clear English? Is the readability good, average or poor? Are there any presentation problems?)  

Please explain your rating:
4. How Original is this paper? [1 (very low) - 6 (very high)]:
(E.g.: Are the problems and approaches new? Is this a novel combination of existing techniques? Does the paper points out differences from related research? Does it address a new problem or one that has not been studies in depth? Does it introduce an interesting research paradigm? Does it introduce an idea that appears promising or might stimulate others to develop promising alternatives?)

Please explain your rating:

Please Summarize the Strength & Weaknesses of the paper:

My overall recommendation is
[ ] Definitely accept
[ ] Minor revisions required before accept
[ ] Major revisions required before accept
[ ] Definitely reject

Recommended minor revisions? (if any)
You can use “track changes” and add your notes directly into the paper. Please indicate if you do so.

Recommended major Revisions? (if any)
(In case of major revisions, the revised paper will be reviewed again and authors will be asked to provide a short summary of the performed revisions along with the revised paper.)

How confident are you in your appropriateness as a referee for this paper?
[ ] Very confident - I am an expert in this area.
[ ] Confident - I have a reasonable knowledge of this area.
[ ] Fairly confident - I have some knowledge of this area.
[ ] Not confident - I have no significant knowledge of this area.

Budgeting and financing project meetings and open workshops
In addition to budgets for RTD, Demonstration, Training and Consortium Management activities, an overall budget was calculated for other direct costs like travel, meetings, workshops, hardware and software (see section 9.5.2 of the DoW). From the advance payments of this budget, 3% is put into a ‘Common Reserve’ as described in Section 6.3 of the Consortium Agreement. Project meeting and workshop costs can be claimed against this Common Reserve under the following rules:

1. Claim against valid activity type:
   Each organized event should be linked to an activity type against which costs can be claimed, i.e. Management, RTD, Training, or Demonstration. The choice for
the activity type has to be justified, as it defines which part of the costs can ultimately be recovered through the EC, depending on the funding regime of the concerning partner.

2. Eligible costs under the Common Reserve regime:
   Only part of the event costs can be reimbursed out of the Common reserve, i.e. costs for conference rooms & facilities, coffee/tea, shuttles, and printing costs proceedings.

3. Non-eligible costs under the Common Reserve regime:
   The following costs have to be covered within the budget of the organizing partner or by the attendees, i.e. lunches, dinners, etc. The standard policy is that for open events, non-partner attendees will give a fair contribution to cover their share of the costs of the event.

The organizing partner submits the proposed budget for the event to the TENCompetence Secretariat for approval. At the end of each 12 month period (in relation to the cost statements) any partner who wishes to claim approved costs from the Common Reserve, should include this in the cost statement sent to the co-ordinator.

If the total amount of the eligible costs claimed is less than the total of the Common Reserve, all claimed costs will be added to the budget of the parties concerned. If the total amount of the eligible claimed costs is greater than the total of the Common Reserve, a proportional part (the relation between the claimed costs and the Common Reserve) of the claimed costs will be added to the budget of the parties concerned.
3. Progress monitoring and reporting

Progress monitoring and reporting is both an internal project activity and a requirement from the Commission. This chapter describes the various report types, details by whom and how to compile them, and the project-internal acceptance procedure.

Report types

Report types and submissions intervals

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Consortium Reports</td>
<td>Used for internal monitoring only, and are not submitted to the Commission.</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Internal Consortium Reports to be submitted to the Secretariat:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Internal Consortium Activity Report</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Internal Consortium Activity Report by Work Package Leader</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Internal Consortium Activity Report by Contractor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Internal Consortium Costs Report</td>
<td></td>
</tr>
<tr>
<td>Interim Activity Reports</td>
<td>To be submitted by the Secretariat to the Commission, every three months,</td>
<td>month 18, 30, 42</td>
</tr>
<tr>
<td></td>
<td>based on inputs from the WP-leaders (WP progress report)</td>
<td></td>
</tr>
<tr>
<td>Periodic Reports,</td>
<td>To be submitted to the Commission by the Secretariat at the end of each</td>
<td>month 24, 36</td>
</tr>
<tr>
<td>including on-line</td>
<td>reporting period (12 months).</td>
<td></td>
</tr>
<tr>
<td>questionnaires</td>
<td>Periodic Reports to be submitted to the Commission:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Periodic Activity Report</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Periodic Management Report</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Periodic Report on the Distribution of the Community’s Contribution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Draft planning for the next 18 months (18-month Implementation Plan)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On-line questionnaires to be submitted to the Commission:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interim Science and Society Reporting Questionnaire</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interim Reporting on the Implementation of the Gender Action Plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interim Socio-Economic Reporting Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Final Reports</td>
<td>To be submitted by the Secretariat to the Commission at the end of the</td>
<td>month 48</td>
</tr>
<tr>
<td></td>
<td>project in addition to the periodic reports for the last reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>period. In this project cycle these are not yet relevant.</td>
<td></td>
</tr>
</tbody>
</table>

1 For further details see ‘Project Reporting in FP6’, http://cordis.europa.eu.int/fp6/find-doc-management.htm#reporting
**Internal reporting**

Internal report details and their compilation procedures are detailed below.

<table>
<thead>
<tr>
<th><strong>Internal Consortium Activity Report - per WP</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>The report is compiled every three months for internal progress monitoring at Work Package and overall project level. The information on individual Work Packages is submitted by WP-leaders to the Secretariat, and on partner progress by the Local Project Co-ordinators.</td>
</tr>
<tr>
<td><strong>Collected data</strong></td>
</tr>
<tr>
<td>The data are collected at the level of an individual Work Package, and pertain to: a) started and finished tasks; b) general progress (overall status, results, risks, etc.); c) plans for the next period; d) management issues; and e) progress at Task level.</td>
</tr>
<tr>
<td><strong>Compiled report</strong></td>
</tr>
<tr>
<td>The collected data are compiled into an aggregated version for presentation to the Executive Committee and Consortium Board.</td>
</tr>
<tr>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td>i. The TENCompetence Secretariat sends out the data collection spreadsheet (the latest version will be distributed by email, for an example see the forum in “News and Information for Partners” at <a href="http://www.tencompetence.org/course/view.php?id=28">http://www.tencompetence.org/course/view.php?id=28</a>) to the Local Project Co-ordinator before the end of the three-month project execution period.</td>
</tr>
<tr>
<td>ii. The Local Project Co-ordinator collects the required information from the WP Leader, and returns the completed spreadsheet to the Secretariat not later than 1 week after closure of the three-month period.</td>
</tr>
<tr>
<td>iii. Once the Secretariat has received the data on all Work Packages, it compiles the ’Aggregated Internal Consortium Activity and Cost Report’ (see below).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WP Progress Summary Report - per WP</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>The report is compiled every three months for reporting to the Commission. It contains a summary of WP-progress over the past three months, and is compiled by the Secretariat into an Interim Activity Report.</td>
</tr>
<tr>
<td><strong>Collected data: the following template is used for reporting:</strong></td>
</tr>
<tr>
<td><strong>WP</strong></td>
</tr>
<tr>
<td>Overall status</td>
</tr>
<tr>
<td>Main results</td>
</tr>
<tr>
<td>Deviations</td>
</tr>
</tbody>
</table>
## Concerns

<table>
<thead>
<tr>
<th>Progress on Tasks</th>
<th>Deliverables</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Compiled report</th>
</tr>
</thead>
<tbody>
<tr>
<td>The collected data are compiled into an aggregated by the Secretariat into an Interim Activity Report for submission to the Project Officer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reporting procedure is combined with that of the Internal Consortium Activity Report (see above).</td>
</tr>
</tbody>
</table>

## Internal Consortium Costs Report

### Summary

The report is compiled every three months for internal financial monitoring at Work Package, partner and overall project level (by activity types) by the partners, and submitted to the Secretariat.

### Collected data

The financial data are collected per partner (as the budget holder) and sent to the Secretariat for processing. Cost types - personnel (at the level of individual staff members), equipment, travel & subsistence, other direct costs, subcontracting, and indirect costs (FC only) - are charged against activity type (RTD, training, demonstration).

### Compiled report

The collected data are compiled into an aggregated version for presentation to the Executive Committee and Consortium Board.

### Procedure

i. At the start of the 12-month reporting period the Secretariat provides each Local Project Coordinator with a spreadsheet in which the costs have to be entered on a 3-monthly basis, and which are then automatically accumulated (See http://www.tencompetence.org/mod/forum/discuss.php?d=350 for the current version 06-02-2006).

ii. The completed spreadsheet should be received by the Secretariat no later than one week after the end of the three-monthly reporting period.

i. Once the Secretariat has received all Cost Reports it compiles the ‘Aggregated Internal Consortium Activity and Cost Report’ (see below)
**Aggregated Internal Consortium Activity and Costs Report**

**Summary**

The report is compiled every three months by the Secretariat, based on the received Internal Consortium Activity Reports and the Internal Consortium Costs Reports. The WP-leaders compile a WP progress summary report.

**Collected data**

The data are collected through the Internal Consortium Activity Reports and the Internal Consortium Costs Reports.

**Compiled report**

The collected data are compiled into an aggregated version for presentation to the Executive Committee and Consortium Board.

**Procedure**

i. Once the Secretariat has received the Internal Consortium Activity Reports and the Internal Consortium Costs Reports (see above) from all Work Packages, it compiles an aggregated version for presentation to the Executive Committee and/or the Consortium Board. This will be available not later than two weeks after the reception of the last WP-reports.

ii. In case the reported data raises concerns, the Secretariat may take this up with the Project Coordinator and/or Executive Committee immediately.

---

**Internal report acceptance procedure**

The following table lists the decision-making responsibilities regarding the various reports.

<table>
<thead>
<tr>
<th>Responsible body: Product and decision type:</th>
<th>CB</th>
<th>EC</th>
<th>PC</th>
<th>WPL</th>
<th>AC</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal Consortium Report endorsement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Consortium Activity Reports - per WP</td>
<td>D</td>
<td>P</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Consortium Activity Reports - aggregated</td>
<td>D</td>
<td>P</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Consortium Costs Reports - per WP</td>
<td>D</td>
<td>P</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Consortium Costs Reports - aggregated</td>
<td>D</td>
<td>P</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interim Activity Report</strong></td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Periodic Report endorsement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Periodic Activity Report</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Periodic Management Report</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Periodic Report on the Distribution of the Community’s Contribution

<table>
<thead>
<tr>
<th>Draft planning for next 18 months:</th>
<th>D</th>
<th>D</th>
<th>P</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>• WP 18-month Implementation Plan</td>
<td>D</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>• WP 18-month budget</td>
<td>D</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>• Overall 18-month Implementation Plan</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>• Overall 18-month budget</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

Responsible bodies:  
CB = Consortium Board  
EC = Executive Committee  
PC = Project Co-ordinator  
WPL = Work Package Leader  
AC = Advisory Committee  
PS = Project Secretariet

Decision types:  
P = propose  
A = advise  
D = decide (approve/reject)

**Reporting to the Commission**

Reports for the Commission and their compilation procedures are detailed below.

**Periodic reports - overview**

Summary

The Periodic Reports comprise a total of four reports and three on-line questionnaires that have to be submitted to the Commission at the end of each reporting period (12 months).

Collected data

The Periodic reports are to a large extent the aggregation and consolidation of the Internal Consortium Activity Reports and the Internal Consortium Costs Reports. In addition, the following information has to be provided:

<table>
<thead>
<tr>
<th>Additional information required for Periodic reports</th>
<th>Provided by</th>
</tr>
</thead>
<tbody>
<tr>
<td>An update of the Plan for using and disseminating the knowledge, as part of the Periodic Activity Report</td>
<td>WP9 + WP10</td>
</tr>
<tr>
<td>Financial Statement (‘form C’), together with an audit certificate for those partners for whom the financial Community contribution exceeds E. 150,000,- over the cumulative reporting periods, as part of the Periodic Management Report</td>
<td>each contractor</td>
</tr>
<tr>
<td>Draft planning for the next 18 months (WP detailed implementation plans).</td>
<td>WP Leaders</td>
</tr>
<tr>
<td>Interim science and society reporting questionnaire (on-line)</td>
<td>Co-ordinator</td>
</tr>
<tr>
<td>Interim implementation of the gender action plan questionnaire (on-line)</td>
<td>Co-ordinator and each contractor</td>
</tr>
<tr>
<td>Interim socio-economic reporting questionnaire (on-line)</td>
<td>each contractor</td>
</tr>
</tbody>
</table>

2 For further details see ‘Project Reporting in FP6’, http://cordis.europa.eu.int/fp6/find-doc-management.htm#reporting
Compiled reports

- Interim Progress Report
- Periodic Activity Report
- Periodic Management Report
- Periodic Report on the Distribution of the Community’s Contribution
- Draft planning for next 18 months.

On-line questionnaires:

- Interim Science and Society Reporting
- Interim Reporting on the Implementation of the Gender Action Plan
- Interim Socio-Economic Reporting.

Procedure

i. The Secretariat will coordinate report compilation in assistance to the Executive Committee.

ii. The draft reports will be reviewed at an extraordinary meeting of the Executive Committee not later than two weeks after closure of the 12-month reporting period.

iii. Depending on the outcome of that meeting, the drafts will be adjusted first, or may be sent directly to the annual meeting of the Consortium Board with a recommendation for their approval. The total set of reports shall be distributed to all Parties at least two weeks before the Consortium Board meeting (not later than five weeks after closure of the 12-month reporting period).

iv. The Consortium Board discusses reports during its annual meeting, modifies or amends them, if necessary, and accepts the final version with a majority of the Parties.

v. The final and approved reports will be submitted to the Commission not later than 45 days after closure of the 12-month reporting period.

The procedure for compilation, approval and submission of each of the four periodic reports is detailed below.

---

### Interim Progress Report (3 monthly)

**Summary**

The Interim Progress Report consists of a summary on WP progress and expenditure over the past three months.

**Collected data**

Based on the WP Progress Summary Reports and Internal Consortium Cost Reports.

**Compiled report**

An aggregate of the WP Progress Summary Report and Costs Reports, to be presented to the Project Officer.

**Procedure**

The Secretariat will provide the Project Officer with the Interim Activity Report at month 6.
### Periodic Activity Report

**Summary**

Provides an overview of project progress over the past 12 months, to be submitted to the Commission.

**Collected data**

Data required to compile the report includes: activities carried out; progress in relation to the project objectives; internal deliverables and deliverables status; and relevant problems and corrective actions taken. These data will to a large extent be derived from the Internal Consortium Activity Reports that were compiled over the 12 month reporting period.

**Compiled report**

The Periodic Activity report to a large extent consolidates the data collected through the Internal Consortium Activity Reports and the Internal Consortium Costs Reports. In addition, the following information will be provided in the Periodic Activity Report:
- A publishable executive summary
- An updated Plan for using and disseminating the knowledge.

**Procedure**

i. The Secretariat will start compiling a first draft of the Periodic Activity Report in month 11 of the project.
ii. WP9 and WP10 will be asked to deliver an updated Plan for using and disseminating the knowledge during month 11.
iii. As soon as the Internal Consortium Activity Reports for months 10-12 have been received (one week after the end of month 12 latest), the draft report will be consolidated.
iv. The report will be reviewed at an extraordinary meeting of the Executive Committee.
v. For completion of the procedure, see ‘Periodic reports - overview’ for further details.

### Periodic Management Report

**Summary**

Provides and audited overview and justification of costs incurred and resources deployed over the past 12 months, to be submitted to the Commission.

**Note:** Contractors requesting a Community financial contribution for one or more reporting periods of less than EUR 150,000 need not submit an audit certificate, until the cumulative request for Community financial contribution is equal to or exceeds EUR 150,000 for the reporting periods for which an audit certificate has not yet been submitted. In all cases an audit certificate shall be submitted at the latest 45 days after the final reporting period. This final audit certificate shall cover all periods for which an audit certificate has not been previously submitted.

**Collected data**

Data required to compile the report will be derived from the financial administration as kept by the Consortium Secretariat. In addition the following have to be provided by each contractor:
- Form C to the contract: ‘Model of Financial Statement per Activity for an Integrated Project’.
- Audit Certificate.
Compiled report

The Periodic Management report to a large extent consolidates the data collected through the Internal Consortium Activity Reports and the Internal Consortium Costs Reports. The Forms C and Audit Certificates will be annexed to the report.

Procedure

i. The Secretariat will start compiling a first draft of the Periodic Management Report in month 11 of the reporting period.
ii. The contractors submit completed Forms C not later than one week after the end of month 12 of the reporting period.
iii. As soon as the Internal Consortium Costs Reports for months 10-12 of the reporting period have been received (not later than one week after the end of month 12), the draft will be consolidated.
iv. The report will be reviewed at an extraordinary meeting of the Executive Committee not later than two weeks after closure of the 12-month reporting period (for completion of the procedure, see ‘Periodic reports - overview’).
vi. The partners will submit the Audit Certificates not later than three weeks after the end of month 12 for inclusion in the report version that will be sent to the Board (the audit can be invoiced under the next reporting period).

Periodic Report on the Distribution of the Community’s Contribution

Summary

Records the distribution of funding to each contractor over the first 12 months, to be submitted to the Commission.

Collected data

Data required to compile the report will be derived from the Internal Consortium Costs Reports that were accumulated over the 12-month reporting period.

Compiled report

Overview of funding distribution to each contractor.

Procedure

i. The Secretariat will compile the distribution overview on the basis of the accumulated Internal Consortium Costs Reports received (not later than one week after the end of month 12).
ii. The report will be reviewed at an extraordinary meeting of the Executive Committee not later than two weeks after closure of the 12-month reporting period.
iii. For completion of the procedure, see ‘Periodic reports - overview’.
# Draft Planning for next 18 months (Updating the Implementation Plan)

## Summary

The annual draft planning for the next 18 months involves an update of the detailed implementation plan (see chapter 8 of the DoW), together with the corresponding budget information. On the basis of this information the Commission will decide on approval for the next 18 months.

## Collected data

The DoW forms the basis for the updated information plan. The DoW is then detailed and adjusted for the next 18 months on the basis of:

- progress made during the previous 12 months
- new developments in research and technology development domains relevant to the project
- feedback received from the pilots (once available).

## Compiled report

The detailed implementation plan will contain an update on:

- General description and internal deliverables
- TENCompetence assessment protocol
- Planning and timetable
- Graphical presentation of work packages
- Work package list
- Deliverables list months 13-30/25-42/36-48
- Work package descriptions form (for each WP)
- IP Effort form months 13-30/25-42/36-48

## Procedure

The Project Co-ordinator and the Executive Committee are responsible for the development, extrapolation and harmonisation of the Implementation Plan. The Secretariat will coordinate the day to day compilation of the Implementation Plan.

collect input from WP-leaders, Subcommittee Chairs, the contractors through the Board

i. The Work Package Leaders, supported by the Work Package participants, design a detailed plan for their Work Packages for the following 18 months period. This is submitted to the Secretariat not later than 2 weeks before the end of month 12.

ii. The Secretariat compiles an overall update of the implementation plan, including the budget overview.

iii. This plan will be reviewed at an extraordinary meeting of the Executive Committee not later than two weeks after closure of the 12-month reporting period.

iv. For completion of the procedure, see ‘Periodic reports - overview’. 
Plan adjustments

The following table lists the decision-making responsibilities regarding project plan adjustment.

**Plan adjustment decisions**

<table>
<thead>
<tr>
<th>Responsible body:</th>
<th>CB</th>
<th>EC</th>
<th>PC</th>
<th>WPL</th>
<th>AC</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product and decision type:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Plan adjustment**

<table>
<thead>
<tr>
<th>WP mid-cycle milestones &amp; deliverables</th>
<th>D</th>
<th>P</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP mid-cycle budget</td>
<td>D</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>Consortium Agreement* and membership</td>
<td>D</td>
<td>P</td>
<td>A</td>
</tr>
</tbody>
</table>

Responsible bodies:  
CB = Consortium Board  
EC = Executive Committee  
PC = Project Co-ordinator  
WPL = Work Package Leader  
AC = Advisory Committee  
PS = Project Secretariat

Decision types:  
P = propose  
A = advise  
D = decide (approve/reject)

* Note: An adjustment to the Consortium Agreement has to be endorsed by the authorized representative of each partner.
4. TENCompetence assessment protocol

In TENCompetence we qualify and quantify project outputs, and have devised a mechanism to link output norms to project staff input. This mechanism is explained in this chapter.

TENCompetence output types

TENCompetence deliverables comprise reports and prototypes. These deliverables are tightly related to the three project cycles. In addition to these deliverables, TENCompetence also produces outputs typically related to RTD activities throughout its four year life-cycle:

- Scientific publications and technologies resulting from the RTD activities (WP2-8)
- A variety of valorisation activities (WP9-10).

For the RTD outputs the TENCompetence assessment protocol defines:

- The (qualitative) criteria the output should meet
- The appraisal mechanism for awarding ‘output points’
- The required (quantitative) productivity, or output norm.

For the valorisation activities, the impact will be assessed through:

- a set of indicators on project output consultation and use
- according to different target groups.

RTD output types and quality criteria

The quality and the productivity criteria of the RTD outputs (WP2-8) can be divided into two categories: scientific publications and technologies. As an RTD project, TENCompetence output should meet internationally recognised standards. Consequently the TENCompetence Assessment Protocol (TAP) is based upon, and is in line with, internationally approved protocols such as the Standard Evaluation Protocol (Standard Evaluation Protocol 2003 – 2009 For Public Research Organisations - ISBN 90-5588 278x, 2003).

TENCompetence applies the regular scientific output norm, i.e. every scientific full time equivalent (FTE) produces three scientific publications a year, or the equivalent in technologies. The input FTE’s are corrected for overhead and for type of staff (see under ‘Output norms’ for details).

---

3 Technologies are the artefacts that are developed in the project, like software, specifications and methods/models.
Scientific publications cover:
- Peer-reviewed journal articles
- (chapters in) Scientific books
- Scientific conference papers.

Technologies cover artefacts that are developed in the project:
- Specifications
- Methods/models
- Software.

The quality criteria for each of these output types are outlined below. In addition as of 1 November 2006 the following general criteria should be applied:
- The output should contain an acknowledgment similar to “The authors’ efforts were (partly) funded by the European Commission in TENCompetence (IST-2004-02787) (http://www.tencompetence.org).”
- The output should follow from the activities performed within TENCompetence. In case the output is the result of collaboration with an other externally funded project output points will be assigned proportionally.

**Peer-reviewed journal articles**

Accepted scientific journals are:
- All SCI/SSCI journals, including open access journals, see http://www.isinet.com/cgi-bin/jrnlst/jloptions.cgi?PC=master
- Journals that are listed on the extension list (See http://wiki.tencompetence.org/index.php/Advanced_Learning_Technology_Journals for the latest version), created by the Scientific Committee.

The journals contained in the extension list were selected for meeting the following criteria:
- Journal must have a published peer-review system with an editorial board consisting of well known scholars in the field.
- English language journals only (English is the working language within the project)
- Published papers come from international sources (so journals that publish mainly local papers are excluded)
- Appears in a fixed frequency.
- Publishes papers above 2000 words.

**(Chapters in) scientific books**

For books only scientific publishers that use an internal scientific review system will be granted output points. The publishers/series will be listed by the Scientific Committee. A first version of the list is provided at: http://projects.edte.utwente.nl/ico/ico_uitgevers.html and may later be expanded by the Scientific Committee.
Scientific conference papers
Conference papers do only count for output points when the following criteria are met:

- The conference/workshop has had an open call for papers.
- The conference/workshop is international (local workshops are excluded).
- The acceptance rate has not been higher than 50%. The papers are in English.
- The conference/workshop uses a regular peer-reviewed system that is performed by a published scientific board.
- The papers are published by an international scientific publisher (e.g. Springer Lecture Notes, IEEE, ACM), but also less well known publishers can be included as long as the proceedings can be ordered through any book shop in the world).

An advisory list created by the Scientific Committee can be found at:
http://wiki.tencompetence.org/index.php/Advanced_Learning_Technology_Conferences

Other papers
In addition to the peer-reviewed journal articles, (chapters in) scientific books and scientific conference papers described above, the following additional types of papers are of relevance to TENCompetence and its stakeholders:

- Papers which report on project work, but which are not in approved journals (for example short papers presented at project workshops, but which are not selected for inclusion in the journal).
- Papers which discuss TENCompetence, but which are not reporting on the execution of the work plan, and thus are no candidate for output points (even when accepted in an approved journal).

Such articles should also be reported in the three-monthly activity reports and be made available publicly and to the reviewers, stating clearly their status.

Technology output
To make the technology output equivalent to the publication output, similar criteria for technology output are used as for publications:

- The technology is publicly available and accessible (e.g. through open-source channels like source forge).
- Members of the relevant RTD community can replicate the work on the basis of the documentation provided, i.e. rebuild alternative technologies on the basis of the requirements and the design.
- Members of the relevant RTD community can continue to work on and elaborate the technologies.
- The output is peer reviewed, e.g. for software this can be operationalised in that the software is used by others (number downloads, number of questions, number of contributions, etc.).

The output quality of prototypical software is assessed against the following criteria:

- Software scope qualitative
- Software coding qualitative.
**Software scope qualitative criteria.** Any software eligible for output points should comply with the following three criteria:

- **Relevance:** How relevant is the software for the further development of the domain?
- **Significance:** How important is the problem addressed by the software for the domain? Does the software have a community of users?
- **Originality:** Are the problems and approaches new? Is this a novel combination of existing techniques?

**Software coding qualitative criteria.** Software that is eligible for any output points should meet the following quality assurance criteria.

- **Code readable:** Readable code includes systematic naming conventions and good formatting/indentation.
- **Code commented:** In Java based projects, JavaDoc comments should be used to drive HTML based documentation. Equivalent technologies to drive XML output are available in .NET (for example NDoc)
- **Code structured:** Well structured code refers to the way in which the code is modularised and the way in which code modules are grouped together. Good package naming conventions in Java and name spacing in .NET are evidence of a thoughtful approach to code structure.
- **Code efficient:** Although performance profiling is often addressed towards the later stages of a prototype (through tools such as JProfiler), code should be written with performance in mind. Evidence of this will include judicious choice of variable data types and appropriate data structures, CPU and memory efficient operations, appropriate choice of XML parsing tools etc.
- **Testing:** Although there is some overhead required to put unit testing in place, developers who use it, find that unit testing saves development time. In principle, best practice is for each algorithm method to focus on one operation and for each method to be testable using a single unit test. In Java based projects, JUnit is a popular unit test framework. In .NET, NUnit is an equivalent.
- **Deployment:** All software and documentation should be written in such manner that is possible to install and run this software on a different environment than the one that is used for the development. This should not require any re-factoring in the code.
- **API documentation available:** Typically linked from the project website. The API documentation should be kept in sync with the source code by using a technology such as JavaDoc (for Java projects) or NDoc (for .NET projects)
- **Source code publicly available with archive facility (e.g. Source Forge):** Even with a well developed project website, source code should also be maintained on a public website with archiving facility.
- **Licensed and download available:** Typically a download is linked from the project website. The download should only be made available with the New-BSD, 3 clause license in place (see http://www.opensource.org/licenses/bsd-license.php).

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4 *Software Quality Assurance (QA) and Open Source Maturity Model (OSMM) Development*, retrieved from http://www.jisc.ac.uk/uploaded_documents/ACFCDE.doc
The TENCompetence Foundation should be included as the OWNER in this license.

**Awarding RTD output points**

The various RTD outputs described above are appraised as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Output</th>
<th>Points</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific output</td>
<td>Refereed SCI/SSCI journals</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Journals on extension list</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Book chapters</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conference papers</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Books</td>
<td>3</td>
<td>Divided by the number of authors</td>
</tr>
<tr>
<td></td>
<td>Ph.D. thesis</td>
<td>1</td>
<td>In addition to the published papers that are part of the thesis</td>
</tr>
<tr>
<td>Technology output</td>
<td>Software source code</td>
<td>≥ 1</td>
<td>see: RTD output norms, Technology output</td>
</tr>
<tr>
<td></td>
<td>Software documentation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LT Specification</td>
<td>≥ 1</td>
<td>note: norms to be decided</td>
</tr>
<tr>
<td></td>
<td>Models, Methods, etc.</td>
<td>1</td>
<td>note: norms to be decided</td>
</tr>
<tr>
<td>Non-scientific/non-technology output</td>
<td>Professional publications</td>
<td>0</td>
<td>All publications that do not comply to the norms of scientific publications.</td>
</tr>
<tr>
<td></td>
<td>Papers for a professional audience</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software source code</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Awarding output points for scientific output is rather straightforward. For technology output there is not yet such a well established and widely accepted procedure. Software eligible for output points in TENCompetence should represent a significant amount of work, equivalent to four months of effort for a senior scientific developer. A useful operational translation of this effort can be made by estimating the average number of lines that a senior scientific programmer can produce per effective working day. This is set to be 10 lines of actual code per day using a third generation programming language like Java or C#. On the average a line of code will consist of a single statement typically terminated by a semi column.
In these 10 lines of code per day are included:

- All efforts required to make to functional design
- All efforts required for the technical design
- All efforts needed to make the code compliant to the quality assurance norms mentioned under ‘Software coding, qualitative criteria’ above.

Reuse of code of others should be clearly marked and does not count for the output.

Converting the four month effort into the number of lines that could be awarded with one output point leads to the following calculation assuming a month has 17 effective working days: \(10 \times 17 \times 4 = 680\) lines of code.

For a software component to become eligible for output points, its delivery and links to downloads must have been posted in “News for all partners”.

**RTD output norms**

TENCompetence uses the regular scientific output norm, i.e. every scientific full time equivalent (FTE) produces three scientific publications a year, or the equivalent in technologies.

The scientific norm of three publications applies to assistant-, associate- and full professors. For other types of staff this norm is corrected for overhead and academic seniority (distinguished staff types are: professor, post-doc, and PhD student): postdocs and PhD students are expected to produce less than a professor. For technology output a distinction is made between senior technologists and junior technologists (equivalent to postdoc).

The number of points that a certain technology output will gain depends on the normative input size: three output points are earned for a technology that is developed and delivered by each FTE average senior technologist in the period of one year (to be corrected for overhead).

The overhead in European projects for scientific and technology work is estimated at 30% per scientific or technology FTE. This overhead consists of: additional distance communication, meetings, travel, and costs of inter-cultural communications/delays (e.g. language difficulties). The table below specifies the number of required output points for each scientific and technology FTE in the RTD activities.

**Output norms per staff type**

<table>
<thead>
<tr>
<th>Job title</th>
<th>Output norm in points per year per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full/Assoc./Assistant professor</td>
<td>2.1 ((0.7 \times 3)) output points</td>
</tr>
<tr>
<td>Post-doc</td>
<td>1.4 ((0.7 \times 2)) output points</td>
</tr>
<tr>
<td>Ph.D. student</td>
<td>1.05 ((0.7 \times 1.5)) output points</td>
</tr>
<tr>
<td>ICT senior staff</td>
<td>2.1 ((0.7 \times 3)) output points</td>
</tr>
<tr>
<td>ICT junior staff</td>
<td>1.4 ((0.7 \times 2)) output points</td>
</tr>
<tr>
<td>Supporting staff</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
Example: Calculate the year-1 output norm (months 1-12):

<table>
<thead>
<tr>
<th></th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTEs in the RTD activities year 1 (2/3 of 18 months project cycle 1)</td>
<td></td>
</tr>
<tr>
<td>Type of staff: professor &amp; senior ICT staff (norm = 2.1)</td>
<td>2.1</td>
</tr>
<tr>
<td>Output norm year 1 (19 * 2.1)</td>
<td>40</td>
</tr>
</tbody>
</table>

Example: Calculate expected output points per partner.

Example:

The output points per WP or per Partner can be derived from the allocated person months for WP2-WP8 by following two steps:
1. Determine your staff budget for staff participating in WP2-WP8
2. Map your staff on the ‘Staff type’ table above

Ad. 1: Suppose you have the following budget/pms available: 12 man months with average pm cost of E. 5000,.-. Two of these pms belong to WP9. This leaves you with 10 pms for WP2-WP8 and a E. 50.000,- staff budget.

Ad. 2: Assume that for this budget you have assigned 2 pms at professor level; 4 pms at post-doc level; and 8 pms at ICT junior level (columns A and B). With the help of the output norms (column E), we now can easily calculate the required output (column F).

<table>
<thead>
<tr>
<th>A: Staff category</th>
<th>B: mm</th>
<th>C: mm costs</th>
<th>D: BxC</th>
<th>E: output norm</th>
<th>F: ExB/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>2</td>
<td>7000</td>
<td>14000</td>
<td>2.1</td>
<td>0.35</td>
</tr>
<tr>
<td>Post-doc</td>
<td>4</td>
<td>3500</td>
<td>14000</td>
<td>1.4</td>
<td>0.47</td>
</tr>
<tr>
<td>PhD</td>
<td>0</td>
<td>0</td>
<td>1.05</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>ICT-staff</td>
<td>0</td>
<td>0</td>
<td>2.1</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>ICT junior</td>
<td>8</td>
<td>2750</td>
<td>22000</td>
<td>1.4</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50000</td>
<td>1.75</td>
<td></td>
</tr>
</tbody>
</table>

**Valorisation impact appraisal**

The impact of the activities carried out in WP9 and WP10 on the target audiences cannot be directly measured and will be derived from a set of indicators. The following indicators will be made available for the project review.

**Impact information overview.**

<table>
<thead>
<tr>
<th>Impact indicator</th>
<th>Verification method</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Number of training sessions, the number of attendees, their background and interests and appreciation</td>
<td>questionnaire</td>
<td>WP9</td>
</tr>
<tr>
<td>2 Number of workshops, the number of attendees, their background and interests and appreciation</td>
<td>questionnaire</td>
<td>WP10</td>
</tr>
<tr>
<td>3 The number of professional presentations and/or papers (including title, event, magazine info)</td>
<td>questionnaire</td>
<td>WP1</td>
</tr>
<tr>
<td>4 Set-up of the Ph.D. network, the number of participants, their background and their appreciation</td>
<td>questionnaire</td>
<td>WP9</td>
</tr>
<tr>
<td>5 Set-up of the Competence Network of Associate Partners, the number of participants, their background and their appreciation</td>
<td>questionnaire</td>
<td>WP9+10</td>
</tr>
</tbody>
</table>
**Impact indicator** | **Verification method** | **Responsible**
---|---|---
6 | Number of software downloads | WP10
7 | Number of organisations using or planning to use (part of) the software, their type of activities and their user/customer base | survey | WP9+10
8 | Number and type of spin-off projects | survey | WP9+10
9 | Number of questions on the website, the background of the questioner, the response time, the appreciation | questionnaire | WP10
10 | Number of news items posted, the number of news members; their background and their appreciation | questionnaire | WP10
11 | Number of visits of the website, the background of the visitors, the type of information they read, their appreciation | statistics, survey | WP10
12 | Number of web references to TENCompetence | web statistics | WP10
13 | Selection of key publications | scientific committee | WP1 through the Scientific Committee

**Using DSpace for output submission**

All outputs produced by TENCompetence - articles, papers, presentations, software, specifications, etc - should be submitted to DSpace in the proper collection. *Materials that are not submitted to DSpace will not get you output points!*

DSpace can be accessed through the TENCompetence internal Moodle site, top right-hand corner of the opening page.

Please keep the following in mind in using DSpace:

- You are able to upload output and its metadata yourself, but final submission to the DSpace repository will be done after checking by Rob.
- All documents should be in PDF format (except of course for source code); so create PDF of your documents and PowerPoint presentations before submitting.
- When you want to submit a document to more than one collection, you never should submit multiple items. You should always have only a single handle for every document. Add the document to the main collection and ask the administrator to map this item into the other collection(s), of course specifying the collections into which you want to submit the document.
- After you have submitted an item, keep a record of the handle issued.
- When you want to update an item, for example when you had to revise your pre-print, do not submit the new version as a new item. Ask the administrator to change the original item and replace the document with the new item.
- If your pre-print gets published, send the administrator the proper APA reference and handle-id to which the APA reference has to be added.
- Always use the same spelling for author names. First check whether an author already exists in the system and keep the spelling consistent. If you have to add a new author, use Last name and Initials.
- Be sure to enter Last name and Initials in the correct fields; the form requires Last name in the first field, and Initials in the second field.
• Be sure to select the correct collection. Do not submit presentations to the Publications and Preprints collection for example.
• Be sure to use the proper licensing for TENCompetence products (see for details below).

**TENCompetence output licensing**

**For reports, papers, presentations etc.**
For publications, reports, powerpoint presentations, specifications etc. we use the *Attribution – Share Alike 3.0 Unported License* Creative Commons license. When you upload documents in dSpace you are asked to select the applicable Creative Commons License before submission.

In TENCompetence we:
• Allow commercial use of our work
• As long as they share alike.

Selecting these two options in dSpace results automatically in the selection of the Attribution – Share Alike 3.0 Unported License.

**For software**
In TENCompetence we always apply an OSI license (http://www.opensource.org/licenses). Preferably this is the *New-BSD, 3 clause* license (see http://www.opensource.org/licenses/bsd-license.php). This license is used in case the code is completely developed by TENCompetence, *and in all other possible cases*. The TENCompetence Foundation is to be included as the `<OWNER>` in this license.

In cases where it is not possible to use the BSD license, e.g. because we reuse existing software libraries that do not allow BSD, we have to look for the best suitable OSI license on a case-by-case basis.

The OSI license needs to be referenced in all software code when this is uploaded to the SourceForge Concurrent Version System (CVS).
Here is the BSD license template:

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5. Deliverable quality assurance and submission process

The nature of RTD quality assurance in the Unified Process

The TENCompetence project has adopted the Unified Process (UP) to structure its development activities through three project cycles. The quality assurance strategy is therefore closely linked to the Unified Process.

Most quality assurance methodologies, like for example applied by Prince2, start from the premises that before the actual software development process starts 1) the project’s business case is clear, which provides a yardstick against which to validate overall project progress, and 2) the system requirements have been clearly defined, which provides unambiguous guidelines for component- and integrated product testing as the project progresses.

Figure 2. Unified Process

In an RTD project like TENCompetence these criteria are not so clear-cut. In fact, during project cycle 1 (UP Inception and Elaboration phases), the requirements for cycle 2 are formulated. At the same time however - following the UP axiom that each cycle covers the full workflows of requirements definition, analysis, design, implementation and testing, a first integrated version of the TENCompetence infrastructure will already be produced and tested in a pilot.
This cyclic development approach - as opposed to the ‘waterfall approach’ to software development - has the following implications:

- During project cycle 1 the seven major problems that informed the TENCompetence objective served as a temporary business case.
- During the second and third project cycle the business case and requirements definition becomes increasingly explicit, to be used as validation yardsticks.

Quality Assurance in TENCompetence focuses on outcomes (non-critical internal deliverables, critical internal deliverables, and ‘normal’ deliverables) rather than on activities, and combines three approaches to integral QA:

1. QA of scientific outputs and impact criteria contributed to individual work packages.
2. QA of technology outputs produces by work packages, to be integrated into the TENCompetence architecture.
3. Overall project validation criteria and an evaluation plan.

**QA of scientific and technology outputs and impact criteria**

The QA procedure for scientific output (journal articles, book(chapter)s, conference papers) and technology output (specifications, software) is covered extensively in chapter 4.

**QA for project deliverables**

**Deliverable submission to the Commission**

Deliverables should be submitted on the due date, with a maximum contractually permitted delay of 45 days. Any further delay in the submission of a deliverable must be reported in the Interim activity report or the Periodic activity report. If one or more of the partners is late in submitting deliverables, the Co-ordinator may submit the other partners’ deliverables to the Commission.

Deliverables are often written reports but can also take another form, for example the completion of a prototype, etc. In such cases the deliverable should also be documented in a written record of the achievement of the deliverable, including any available supporting material.

Deliverables are submitted to the Commission electronically and on paper as for project reports, unless otherwise specified in the DoW. Each deliverable has a standard front page.

If no modifications to any reports are required, they will be deemed to be approved within 90 days of receipt. Approval of any report does not imply exemption from any audit or review.
In those cases where, following the evaluation of the reports, the Commission considers that the consortium is not performing satisfactorily, it may:

- Reject the reports submitted and request that the consortium complete the work foreseen within a deadline to be established by the Commission. Reports and deliverables shall be re-submitted once completed;
- Approve the reports and deliverables but subject the project to re-negotiation. In this case, the Commission may suspend the project.
- Terminate the contract.

The formal approval of deliverables by the Commission services forms part of the Periodic review process (see next chapter).

**QA procedure**

Project deliverables are first reviewed internally before they are submitted to the Commission. Typically a deliverable is reviewed by two people who a) were not directly involved in production of the deliverable, and b) are knowledgeable on the topic of the deliverable.

Provision of deliverables is the responsibility of the Work Package Leader. Final endorsement of the deliverable before submission to the Commission is the responsibility of the Project Co-ordinator (delegated to the Secretariat).

To be able to review a deliverable properly, it should be submitted to the Secretariat not later than one month before its due date to allow enough time for review and adjustments.

Internal review form used.

---

**Deliverable Review Form**

<table>
<thead>
<tr>
<th>Reviewer Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliation, Country</td>
</tr>
<tr>
<td>Deliverable Number</td>
</tr>
<tr>
<td>Deliverable Title</td>
</tr>
</tbody>
</table>

TENCompetence Project Coordination at: Open University of the Netherlands
Valkenburgerweg 177, 6419 AT Heerlen, The Netherlands
Tel: +31 45 5762624 – Fax: +31 45 5762800

Building the European Network
For Lifelong Competence Development
TENCompetence IST-2005-027087
Please rate the following 4 points – if appropriate for this deliverable –

1. **Relevance** of the deliverable [1 (very low) - 6 (very high)]:
   (E.g.: Does the deliverable conform to the deliverable acceptance criteria (see Handbook, chapter 4 and 5, for details: http://www.partners.tencompetence.org/mod/resource/view.php?id=295)? Does the deliverable contribute to the TENCompetence objectives?)

   Please explain your rating:

2. **Technical quality** of the deliverable [1 (very low) - 6 (very high)]:
   (E.g.: Is the deliverable technically sound? Does it carefully evaluate the strengths and limitations of its contributions? Are its claims backed up? Does the deliverable offer a new form of evidence in support of or against a well-known technique? Does it offer a theoretical analysis of prior experimental results? Related Work?)

   Please explain your rating:

3. **Presentation quality** of the deliverable [1 (very low) - 6 (very high)]:
   (E.g.: Is the deliverable well written? Does it motivate the research? Are the results described and evaluated? Is the deliverable organized in a logical fashion? Is the deliverable written in a manner that makes it accessible to most educators and/or educational system developers? Is the deliverable written in clear English? Is the readability good, average or poor? Are there any presentation problems?)

   Please explain your rating:

4. **How Original** is this deliverable? [1 (very low) - 6 (very high)]:
   (E.g.: Are the problems and approaches new? Is this a novel combination of existing techniques? Does the deliverable points out differences from related research? Does it address a new problem or one that has not been studies in depth? Does it introduce an interesting research paradigm? Does it introduce an idea that appears promising or might stimulate others to develop promising alternatives?)

   Please explain your rating:
Please Summarize the Strength & Weaknesses of the Deliverable:

My overall recommendation is
[  ] Definitely accept
[  ] Minor revisions required before accept
[  ] Major revisions required before accept
[  ] Definitely reject

Recommended minor revisions? (if any)
You can use “track changes” and add your notes directly into the deliverable. Please indicate if you do so.

Recommended major Revisions? (if any)
(In case of major revisions, the revised deliverable will be reviewed again and authors will be asked to provide a short summary of the performed revisions along with the revised deliverable.)

How confident are you in your appropriateness as a referee for this deliverable?
[  ] Very confident - I am an expert in this area.
[  ] Confident - I have a reasonable knowledge of this area.
[  ] Fairly confident - I have some knowledge of this area.
[  ] Not confident - I have no significant knowledge of this area.

The two reviewers return their assessment to the Coordinator. An assessment can lead to three follow-actions:
1. Deliverable approved. The Secretariat checks the lay-out, converts the document to pdf format, prints and binds it, uploads the pdf version to DSpace, and submits it to the Project Officer.
2. Minor revisions required. The WP-leader is asked to update the document and re-submit to the Secretariat for delivery to the Commission.
3. Major revision. The deliverable is returned to the WP-leader with recommendations for major improvements. The re-submitted version will be checked extensively by the Secretariat before it is submitted to the Project Officer.
Hints for writing deliverable reports.

In writing milestone and deliverable reports, please keep in mind the following:

- You are not only writing for your close colleagues, but also for the members of the Review Committee!
- Structure the document well:
  - Include a management summary (and have it proof-read by your partner).
  - Use the main text body for the ‘central message’ and use annexes for (technical) details, research findings, articles, etc. that are not necessary to follow the general line of reasoning.
  - When a document may be of interest to different audiences, include a ‘readers guide’.
- Use the same - preferably rather formal - style throughout the report.
- If you do not feel secure about writing in English, have your text edited by a colleague who is a native English speaker, or by a professional translator.
- Use a front page meeting the EU requirements.

QA of architecture integration

Figure 3. Relation between TENCompetence WP-types
QA in TENCompetence is organised according to the following principles:

- Within the integration RTD activities the cycle of Requirements & Analysis of the Integrated System (WP2) feeds Technical Design & Implementation of the Integrated System (WP3), which is then validated through Pilots with & Validation of the Integrated System (WP4).
- The Aspect RTD work packages (WP5-8) deliver inputs (software products) to be integrated into the technical architecture (WP3).
- All software development activities - whether in the aspect RTD WPs 5-8 or the integration WP3 - have to adhere to proper change management, version management, etc. procedures. These are described in chapter 8 of this Handbook.
6. External project review procedure

A periodic project reviews will be organised by the Commission at the end of the reporting period (month 12) to assess the work carried out. The review may be carried out by the Commission services alone, or by the Commission services with the support of external experts appointed by the Commission.

The review will principally assess:
- the degree of fulfilment of the project work plan for the period
- the degree of fulfilment of the deliverables
- the necessity of the resources that the contractors have employed
- the management aspects of the project
- the likelihood to achieve the results aimed at by the project
- the planning of the next 18 months period
- the plan for using and disseminating the knowledge.

The review will be based only on the written material submitted by the project (reports and deliverables, see previous section), and may additionally involve a “hearing and/or review procedure” with project representatives. The exact timing for performing the review, including any hearing, will be fixed in such a way that the 45 days deadline for report submission, and the 45 days for approval by the Commission can be met (thus latest 90 days after the end of the reporting period, in our case early February 2006).

The outcome of the review will be communicated in writing to the project coordinator. This may include technical recommendations to be taken into account in the project’s planning for the work of the next period, and may recommend amendments to the draft 18-month plan, in which case the consortium will present an amended plan to be appended to Annex I (DoW) to the contract. In all cases the final version of the updated Annex I, including the updated Contract Preparation Forms, will be attached to a formal amendment request submitted by the co-ordinator to the Commission.
7. Overall project evaluation and impact assessment methodology

The goals of TENCompetence validation

The validation strategy as described in general terms in the DOW focuses on three aspects:

1. *Evaluation of the effectiveness of project outcomes.* This will be carried out as part of the activity cluster ‘Pilots with & Validation of the Integrated System’. Highly focused pilots in a challenging and authentic environment are the major instruments in this strategy.

2. *Validation of the technical performance of project outcomes.* This consists of ensuring that the technical systems produced by the project conform to their requirements set out in verifiable form in the specifications documents, and that the component parts of the system interoperate as planned.

3. *(Self-)assessment of project processes and documentation.* This consists of ensuring that optimum processes are in place for the development of project documentation and deliverables, and that all project deliverables and services are evaluated and optimised.

In this chapter we cover the first two aspects; the third aspect is covered in chapters 2, 3, 4 and 5 of this Handbook. Chapter 8 contains guidelines for software development and integration - including testing - to be used *within* Work Packages.

Effectiveness evaluation of the project outcomes

The whole TENCompetence project may be seen as a research undertaking which

- Identifies a set of problems in Life Long Learning
- Hypothesises that a specific set of functionalities will improve the provision of Life Long Learning
- Develops an infrastructure to deliver those functionalities
- Runs pilots to test the hypothesis.

The domain which TENCompetence addresses is defined by the seven problems and their solutions as described in the DOW:

1) new, promising, innovative pedagogical approaches for lifelong competence development, supported by the TENCompetence infrastructure.

2) tools to support individuals, groups and organisations in Europe to find the best solution for their formal or informal learning problem.

3) policies and software agents that support the pro-active sharing of knowledge and learning resources.

4) models and software tools to assess the competences of individuals, groups and organisations in an exchangeable way.
5) software for the effective and efficient support of users who create, store, use and exchange knowledge resources, learning activities, units of learning, competence development programmes and networks for lifelong competence development.

6) software solutions to establish a decentralized, self-organized and empowered management model when using the TENCompetence infrastructure.

7) Integration of isolated tools that are available in the field.

Effectiveness evaluation therefore should focus on these problems and their solutions as provided by the project. The major vehicle for effectiveness evaluation is the use of intensive pilots throughout the three project cycles, and the incorporation of associate partners as the project progresses. The following table shows how the seven solutions, translated into criteria and indicators:

Seven solutions TENCompetence translated into criteria and indicators

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Criteria</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspect 1: In what ways, and to what extent, does the TENCompetence project provide innovative approaches for lifelong learning?</td>
<td>Enables LLL to be provided in new ways in new contexts</td>
<td>- Associate partners and learners report that pilots provide opportunities for lifelong learning which were previously difficult or impossible to obtain.</td>
</tr>
<tr>
<td></td>
<td>Provision of LLL that links individuals, groups and organisations.</td>
<td>- Pilots are observed to generate information flows across these groups</td>
</tr>
<tr>
<td></td>
<td>Provision of ways of providing lifelong learning which have not previously used and/or proposed</td>
<td>- LLL actors in pilots (learners, teachers, Human Resource responsibilities, learning providers) identify innovation. - Peer reviewed publication of results innovative case studies.</td>
</tr>
<tr>
<td>Aspect 2: Does the TENCompetence infrastructure and methodologies enable users to find the best solutions for their formal and informal problems? In what ways, and to what extent?</td>
<td>Use of the system to identify learning solutions</td>
<td>- Pilots show that users are active in identifying solutions on the system. - Learning solutions identified are adopted.</td>
</tr>
<tr>
<td></td>
<td>Good fit of learner and learning solution</td>
<td>- Learning solutions adopted are completed - LLL actors in pilots identify good fit.</td>
</tr>
<tr>
<td></td>
<td>Improved learning outcomes</td>
<td>- Improved performance of individuals groups and organisations involved in pilots, as assessed by selves, peers and managers.</td>
</tr>
<tr>
<td>Aspect 3: Do the TENCompetence infrastructure and methodologies provide policies and software agents that support the pro-active sharing of knowledge and learning resources? In what ways and to what extent?</td>
<td>Knowledge and learning resources are shared.</td>
<td>- Pilots demonstrate sharing activity.</td>
</tr>
<tr>
<td></td>
<td>Policies and software agents increase sharing of knowledge and sharing resources when used.</td>
<td>- Correlation between use of policies and software agents, and levels of sharing.</td>
</tr>
<tr>
<td>Aspect</td>
<td>Criteria</td>
<td>Indicator</td>
</tr>
<tr>
<td>--------</td>
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</tr>
<tr>
<td>Aspect 4: Do the TENCompetence models and software tools enable users to assess the competences of individuals, groups and organisations in an exchangeable way? In what ways and to what extent?</td>
<td>Competence definitions, assessments, and the results of assessments can be exchanged by the different parts of the system</td>
<td>- Competence definitions, assessments and results are exchanged smoothly between the parts of the system in pilots.</td>
</tr>
<tr>
<td></td>
<td>Competence definitions can be exchanged with users outside the system</td>
<td>- Pilot implementations are able to export competence definitions in a way which can be read by other systems.</td>
</tr>
<tr>
<td></td>
<td>Competence definitions and assessments provided are effective basis for identifying LLL opportunities</td>
<td>- Evaluation with pilot learners indicates that competence assessments led to appropriate learning opportunities and programmes for individuals, groups and organisations.</td>
</tr>
<tr>
<td>Aspect 5: Do the TENCompetence infrastructure and methodologies provide users with an effective and integrated system which enables them to create, store, use and exchange knowledge resources, learning activities, units of learning, competence development programmes and networks for lifelong competence development? In what ways and to what extent?</td>
<td>Users with understanding of the task to be undertaken and basic IT skills can use the system without the need for external support.</td>
<td>- In pilots users with basic IT skills are observed use the system without the need for external support. - In pilots use of online help is evenly distributed with regard to functionality</td>
</tr>
<tr>
<td></td>
<td>The system can be used to deliver effective LLL.</td>
<td>- Pilots are completed and their objectives achieved. - Participants do not stop their activity because they cannot use the system. - Evaluation responses from users report that functionality provided is effective</td>
</tr>
<tr>
<td>Aspect 6: Do the TENCompetence infrastructure and methodologies enable users to establish a decentralized, self-organized and empowered management model? In which ways and to what extent?</td>
<td>Use is made of the system to manage LLL by individuals and groups.</td>
<td>- Individuals and groups are observed to use system functionality to manage their own LLL.</td>
</tr>
<tr>
<td></td>
<td>Individuals and groups find the functionality offered effective in managing their own LLL</td>
<td>- Individuals and groups report that they have been empowered. - Change in LLL management practice identified in pilots at individual, group and organisational levels</td>
</tr>
<tr>
<td>Aspect 7: To what extent are the TENCompetence infrastructure and methodologies successful in integrating the isolated tools that are available in the field</td>
<td>An integrated solution is released</td>
<td>- Technical staff report that the TENCompetence system release used in pilots provides all the functionality required. - Qualified server administrator can install and operate the software without external support</td>
</tr>
<tr>
<td></td>
<td>Pilot participants experience the system as a single integrated environment</td>
<td>- In pilots users do not have to launch a number of applications to complete their tasks - Users in pilots perceive that they are using a single system</td>
</tr>
</tbody>
</table>
How this will be applied to the pilots is described in the next section.

**The role of the pilots in the three cycles of project activity**

The TENCompetence project is carrying out research into the best way to address the real life solutions to the challenges presented by Life Long Learning. Consequently the only way of validating the effectiveness outcomes of the project is to use them in authentic and challenging Life Long Learning tasks. This means, firstly, identifying scenarios in which users can use the system while they are carrying out their normal job and training activities, rather than setting up trials, which are attended by users out of their work context. Secondly the pilots must be challenging, in the sense that they should resolve the Life Long Learning need which is at present not adequately addressed.

The pilots are scheduled around the three project cycles, with a planning stage at the start of each cycle and a report produced at the end. Additional pilots run by Associate Partners may be organised at any point, and it is anticipated that this activity will increase as the project progresses.

**Cycle 1.**

In Cycle 1 (inception/elaboration) the existing tools and services are integrated to create the first release of the TENCompetence system. The Cycle 1 pilots will use this system in an authentic and challenging context to provide 'proof of concept'. The work carried out in the Aspect RTD activities in this cycle concentrates on the research and development of new models and technologies, and will be validated in Cycle 2 pilots.

**Cycle 2.**

In the second cycle (construction) the evaluation results of the pilots and the output of the first cycle of Aspect RTD activities will be taken as the input for the integration activities and the infrastructure will be redesigned and extended to accommodate these new results. In this second cycle the main integrated technology development activities will take place to construct the infrastructure. The pilots programme will be greatly expanded in this cycle, with major planned pilots in professional development in medicine, water management in Indonesia, and integrated competence management in the city of Antwerp, as well as in digital cinema. This second cycle of pilots has the character of 'usability pilots', and they will validate that the solutions developed to make the TENCompetence concept a reality are usable, that is to say that they provide effective solutions to real problems in an authentic context.

**Cycle 3.**

In the third cycle (transition) the evaluation results of the pilots and the output of the Aspect RTD activities in Cycle 2 are again taken into account as input for this last cycle. The pilots are now 'business models demonstrators', mainly involving external parties to increase the sustainability.
In this cycle the project pilots will demonstrate to the wider Life Long Learning community the advantages of adopting the TENCompetence concept and the infrastructure which will have been developed to support it. Consequently it is intended to leverage and extend the successful pilots which have been established in Cycle 2. The role of associate partners is also expected to be a key factor in organising pilots in Cycle 3.

The pilots and their evaluation strategy are described in detail in deliverable D4.1 ‘Pilot Evaluation Plan’, http://dspace.ou.nl/handle/1820/684

**Technical testing and validation**

Technical testing and validation of the integrated system is carried out in separate actions from the project pilots.

**Unit and integration testing**

It is essential that the system perform satisfactorily from a technical point of view before it is piloted with users in order to establish its effectiveness for the purposes for which it was designed. The role of technical testing in the project is to ensure the quality and coherence of the integrated system, and in particular the code produced by the project in the context of WP 3. The technical testing focuses on unit testing and integration testing.

The purpose of **unit testing** is to verify that each individual component functions according to the technical specifications. The procedure searches for defects in, and verifies the functioning of, software elements (e.g. modules, programs, objects, classes, etc.) that are separately testable. This may be done in isolation from the rest of the system, depending on the context of the development life cycle and the system. Unit testing typically done by the programmer and not by testers, as it requires detailed knowledge of the internal program design and code.

The purpose of **integration testing**, on the other hand, is to verify that the interaction between the various units which make up the integrated system is satisfactory. According to the plan the implementer delivers a component which has been successfully unit tested to the integrator. The integrator merges this component into intermediate builds. Step by step, bottom-up, each component will be integrated according to the build plan. After each step, the intermediate build is submitted to the integration test. This procedure ensures that each component added is compatible with the components which have already been integrated.

The details for unit and integration testing are covered in the ‘Unit and Integration Test plan’ (detailed in appendix 3 of deliverable D4.1 ‘Pilot Evaluation Plan’, http://dspace.ou.nl/handle/1820/684).
Technical evaluation of the integrated system

Once the integrated system has passed through unit and integration testing it becomes a candidate for a release. Each full release of the system (as opposed to minor updates with bug fixes) undergoes a technical evaluation process.

It is important to establish the performance of the system\(^5\) in the widest possible range of technical environments through a systematic programme of tests. This information is important for setting up pilots with associate partners, as well as for wider dissemination purposes. This aspect is addressed by the ‘Technical evaluation of the integrated system’ (detailed in appendix 4 of deliverable D4.1 ‘Pilot Evaluation Plan’, http://dspace.ou.nl/handle/1820/684).

Financing dissemination activities

In some cases it is possible to finance dissemination activities, such as organising a stand at a conference. The procedure is somewhat similar to the workshop costs being paid from the Common Reserve:

1. As dissemination is a WP10 responsibility, partners planning such a stand send a brief description of the fair/conference, stand type and planned TENCC dissemination activity to you.
2. You assess the planned dissemination activities, and checks with Jos v.d. Broek about finances - I assume that after 2-3 stands we will have a fair idea of what a reasonable price is.
3. At the end of each 12 month period (in relation to the cost statements) any partner who wishes to claim such approved costs from the Common Reserve, should send a cost statement to the co-ordinator (same as with TENCC project meetings).

Business demonstrators, Associate Partners, SMEs, and subcontracting

The issue of subcontracting SMEs from project funds for participation in business demonstrators has led to questions from various partners. Here we summarise the relevant information.

SMEs and business demonstrators: two separate issues

In TENCompetence we try to promote – as part of broader EU policy – the involvement of SMEs in the project. Therefore:

1. Each larger partner has to adopt an SME for active participation in its TENCompetence tasks (Consortium Board minutes 08-04-2008, see box below). All non-Consortium partner organisations wishing to participate in TENCompetence project tasks must be or become an Associate Partner. Thus all SME’s involved in project tasks– even those which are involved through a

\(^5\) With the exception of the first (Antelope) version, as this will only run with a small number of data sets and users.
consortium partner - have to become an Associate Partner. Details on how to do this are available on the public website, and questions can be directed to WP10 (Chris Kew) as formalising Associate Partnerships is part of the WP10 mandate.

2. Each larger partner has to execute a ‘business demonstrator’ through WP4. For this, each large partner has been allocated a number of person months in WP4 under DIP-3. Such a business demonstrator applies TENCompetence tooling in a real-life (‘non-laboratory’) context, where support during execution from the Consortium will be minimal. As such, a business demonstrator requires the involvement of one or more external ‘adopter organizations’ that are not part of the Consortium. This may also be a business unit/department/sister organization that has no link to the TENCompetence project. All planning and preparatory activities together with this/these adopter organization(s) has to be concluded this year (2008) so that implementation of the demonstrators can start in January 2009 – to be reported on progress during the review in February 2009.

3. For those Consortium partners wanting to combine 1 and 2 above (invite an SME to participate in the business demonstrator) a special fund for SME subcontracting is available. Partners can then subcontract part of the preparatory and/or execution tasks of the business demonstrator to an SME. A Consortium partner can apply for E. 20,000,- max. from this fund for subcontracting. The financial implications of subcontracting for the Consortium partner depends on the partner’s cost model: for partners with an FC and FCF model compensation is 50%\(^6\). For partners with an AC model this is 100% (i.e. L3S, Bolton, Sofia). It is not possible to claim indirect costs (EU-terminology for cost category ‘overhead’) for subcontracting. There is one more snag: for partners with an FC and FCF cost model, officially demonstrator activities only get compensated to the tune of 35% (not 50%), so it is important that the SME subcontract covers R&D-type or pilot activities. For Consortium partners wanting to apply to this special SME fund, the procedure is detailed below.

From the minutes of the Consortium Board meeting held on 08-04-2008 in Madrid:

The following proposal from the Vision Group was accepted:

1. Each larger Consortium partner (OUNL, Altran, Logica, UPF, Giunti, UHANN, INSEAD, Ubolton, and Usosia) will adopt at least one SME, and subcontract to the SME(s) either a) software development, b) business demonstrator development and implementation under DIP-3.

2. For this purpose the respective SME’s and the Consortium partner may apply for funding from the SME fund to a max. of about Euro 20,000,- per Consortium partner. The application procedure for this fund is supported by WP10.

3. Each of these larger Consortium partners adopts an Associate Partner to prepare and run a business demonstrator under DIP-3 (the concept was extensively explained during the closed workshop on Monday, April 7). This Associate Partner may be an SME, and thus the SME fund may be used to support such a

\(^6\) Such partners thus can subcontract to an SME for E. 40,000,- max. as they get 50% (= E. 20,000,-) compensated from the SME fund.
Procedure to apply for the TENCompetence SME fund

1. The Consortium partner designs a business demonstrator with an external ‘adopter organization’. The role of the SME in the design is clearly specified.
2. The business demonstrator design is checked with the WP4 leader (UPF) to check whether it meets basic business demonstrator criteria (real-life, innovative, non-formal/informal learning, ...).
3. A draft subcontract is drawn up between the Consortium partner and the SME spelling out the SME’s contribution to the demonstrator (tasks and responsibilities).
4. The draft subcontract is sent to OUNL as consortium coordinator for checking.
5. The SME becomes an Associate Partner by signing a MoU with the subcontract attached to it (this is handled through WP10, Chris Kew; see for details http://www.partners.tencompetence.org/mod/resource/view.php?id=139&subdir=/Associate_Partner_and_SME_Materials).
6. If all is agreed, the business demonstrator can be executed.
7. As the SME subcontracts with the Consortium partner, the Consortium partner pays the SME directly.
8. The SME subcontracting costs are to be included in the cost statement that the Consortium partner sends to the coordinator (OUNL) at the end of the financial year.
8. Software development and management

Software coding conventions and guidelines

Note - the following are modelled on the Eclipse/Sun coding conventions and guidelines.

Naming conventions

Classes and Interfaces

Class names should be nouns, in mixed case with the first letter of each internal word capitalized. Try to keep the class names simple and descriptive. Use whole words - avoid acronyms and abbreviations (unless the abbreviation is much more widely used than the long form, such as URL or HTML).

Examples:
- class Raster;
- class ImageSprite.

Interface names should be capitalized like class names. For interface names, we follow the "I"-for-interface convention: all interface names are prefixed with an "I". For example, "IWorkspace" or "IIndex". This convention aids code readability by making interface names more readily recognizable.

Additional rules:

The names of exception classes (subclasses of Exception) should follow the common practice of ending in "Exception".

Methods

Methods should be verbs, in mixed case with the first letter lowercase, with the first letter of each internal word capitalized.

Examples:
- run();
- runFast();
- getBackground().

Additional rules:

The naming of methods should follow common practice for naming getters (getX()), setters (setX()), and predicates (isX(), hasX()).
Variables

Instance, static, and class constants are in mixed case with a lowercase first letter. Internal words start with capital letters. Variable names should not start with dollar sign $ characters. Variable names should be short yet meaningful. The choice of a variable name should be mnemonic - that is, designed to indicate to the casual observer the intent of its use. One-character variable names should be avoided except for temporary "throwaway" variables. Common names for temporary variables are i, j, k, m, and n for integers; c, d, and e for characters.

Examples:
- int i;
- char c;
- float myWidth.

Constants

The names of class constants and of ANSI constants should be all uppercase with words separated by underscores ("_").

Examples:
- static final int MIN_WIDTH = 4;
- static final int MAX_WIDTH = 999;
- static final int GET_THE_CPU = 1.

Plug-ins and Extension Points

All plug-ins (and plug-in fragments) must have unique identifiers following the same style of naming convention as Java packages. For example, the Eclipse workbench plug-in is named org.eclipse.ui.

Extension points that expect multiple extensions should have plural names. For example, "builders" rather than "builder".

Further guidelines as specified by Sun can be found here - http://java.sun.com/docs/codeconv/CodeConventions.pdf

Conventions for plug-ins

Shared code should be packaged into plug-ins so that each plug-in offers a unique set of functionality allowing for optimal re-use. A proposed core plug-in structure is as follows:

1. TENCompetence Client Host
2. General Utilities Plug-in
3. GUI Utilities Plug-in
4. Persistence / File handling Plug-in
5. XML / JDOM Utilities Plug-in
Dependencies between UI components and business logic components should be eliminated. For example, utility type plug-ins should be factored such that they do not depend on or reference UI components. A Model-View-Controller architecture and Event Model facilitates this pattern. References to Java Interfaces rather than classes also contributes to the plug-in architecture.

Care should be taken when exporting packages and classes. Public packages and classes can be declared in the plug-in manifest and these should usually be limited to public API packages. All other implementations can be made private. This requires the separation of the API from internal implementation. By exporting only API classes one can limit the visibility to downstream clients. Negotiation between plug-in developers may be necessary in order to determine the right balance between public and private dependencies, and developers should reveal only the API in which they have confidence, but be prepared to reveal more of the API as clients ask for it.

Re-usable third-party libraries should be wrapped in plug-in manifests for deployment as Eclipse plug-ins and named accordingly. For example, the XML library JDOM 1.0 could be packaged with a manifest file and made available as org.jdom.plugin version 1.0.0. Plug-ins that depend on a particular third-party library may instead ship the required library file(s) in the packaged plug-in.

JUnit tests for each component should be provided in their own plug-in modules – see ID3.6 for details.

**Extension Points**

Developers are encouraged to provide and declare Extension Points in their plug-in manifests. This Eclipse mechanism provides an XML-based schema approach for declaring the mechanics of a plug-in’s extension point(s).

Extension points define new function points for the platform or application that other plug-ins can plug into. An Extension Point is declared in XML-based schema file that defines the grammar that formally expresses elements, attributes, and types that it relates to. This information can be used by plug-ins to validate extensions. An example of an Eclipse Extension Point is a Menu Item, a View, or an Editor.

Existing Extension Points in the TENCompetence Client are:

- org.tencompetence.tencc.datamodelfactory
- org.tencompetence.tencc.datamodelproviders
- org.tencompetence.tencc.conduits.sharing_conduits
- org.tencompetence.tencc.coordination.providers

These are described in more detail elsewhere in this document.

Future plug-in contributors may then leverage these extension points to provide further functionality to the client.
Naming conventions

TENCompetence plug-ins must follow the naming convention of project namespace followed by module name. The project namespace is org.tencompetence. TENCompetence client plug-ins have the “tencc” name appended to the namespace. For example, a new plug-in for the client application would be named org.tencompetence.tencc.mypplugin.

The convention for naming private and public API packages is for every plug-in intended for external use to have two name spaces. If a package name contains internal, the classes it contains are not intended to be used publicly.

User Interface Guidelines

Again, these are modelled after the Eclipse User Interface Guidelines and being too lengthy to reprint here can be found at:


Runtime, Platforms, Tools and Libraries

Java 5 (v1.5.0) is to be used for the SDK and target runtime. Java 6 (v1.6.0) may be used at a later date once it has been firmly proved and established on all platforms (Windows, Linux, Mac).

The following table lists the Eclipse tools and libraries that are to be used in the project. Note that versions may be changed as updates are made available:

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eclipse Platform</td>
<td>3.2.1</td>
<td>Eclipse SDK and RCP</td>
<td><a href="http://www.eclipse.org">www.eclipse.org</a></td>
</tr>
<tr>
<td>Eclipse Web Tools</td>
<td>1.5.1</td>
<td>Eclipse Web Tools plug-ins</td>
<td><a href="http://www.eclipse.org/wtp/">www.eclipse.org/wtp/</a></td>
</tr>
<tr>
<td>GEF</td>
<td>3.2.1</td>
<td>Graphical Editing Framework</td>
<td><a href="http://www.eclipse.org/gef/">www.eclipse.org/gef/</a></td>
</tr>
<tr>
<td>EMF</td>
<td>2.2.1</td>
<td>Eclipse Modelling Framework</td>
<td><a href="http://www.eclipse.org/emf/">www.eclipse.org/emf/</a></td>
</tr>
</tbody>
</table>

The following table lists the third-party tools and libraries that are currently used in the project. Note that versions may be changed as updates are made available:

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>JDOM</td>
<td>1.0</td>
<td>Java XML Modelling library</td>
<td><a href="http://www.jdom.org">www.jdom.org</a></td>
</tr>
<tr>
<td>Commons Logging</td>
<td>1.5.1</td>
<td>Logging services</td>
<td><a href="http://jakarta.apache.org/commons/logging/">http://jakarta.apache.org/commons/logging/</a></td>
</tr>
<tr>
<td>Commons Codec</td>
<td>3.2.1</td>
<td>Implementations of common encoders and decoders such as Base64, Hex, Phonetic and URLs</td>
<td><a href="http://jakarta.apache.org/commons/codec/">http://jakarta.apache.org/commons/codec/</a></td>
</tr>
<tr>
<td>Name</td>
<td>Version</td>
<td>Description</td>
<td>Link</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>-------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Commons HTTP</td>
<td>2.2.1</td>
<td>Client side of the most recent HTTP standards and recommendations</td>
<td><a href="http://jakarta.apache.org/commons/httpclient/">http://jakarta.apache.org/commons/httpclient/</a></td>
</tr>
<tr>
<td>Google API</td>
<td>latest</td>
<td>Google search client</td>
<td><a href="http://code.google.com/">http://code.google.com/</a></td>
</tr>
<tr>
<td>Skype API</td>
<td>latest</td>
<td>Skype client</td>
<td><a href="https://developer.skype.com/">https://developer.skype.com/</a></td>
</tr>
<tr>
<td>Blowfish library</td>
<td>2.1.4</td>
<td>Encryption services</td>
<td><a href="http://www.schneier.com/blowfish.html">http://www.schneier.com/blowfish.html</a></td>
</tr>
<tr>
<td>Rome</td>
<td>0.8</td>
<td>RSS and Atom Feed parsers</td>
<td><a href="https://rome.dev.java.net/">https://rome.dev.java.net/</a></td>
</tr>
</tbody>
</table>

Additional libraries and tools will be specified and recommended as the project proceeds.

**The Use of a CVS Repository**

**Background**

The TENCompetence development process works in an open manner, utilising an Open Source licensing model and attempting to maintain transparency at all levels. One means to accomplish this transparency is to ensure that all code, documentation and development artefacts are available in a Concurrent Versions System (CVS) Repository.

**CVS and SourceForge**

The TENCompetence project uses SourceForge for its CVS repository. This is a free service that provides hosting for Open Source projects and provides additional services such as issue tracking, forums, project presence, CVS and Subversion Repositories.

**Access rights and user permissions**

We have allocated key project staff as CVS administrators and assigned key developers with CVS developer status. By default, CVS access is read only, and this includes public anonymous access. However, developers are granted write access on a per-module basis.

In order for a developer to be granted write access to files in a module or modules, the following steps have to be taken:

1. The aspiring developer has to register at SourceForge with a user name.
2. A SourceForge administrator has to add the user as a developer to the SourceForge project admin page.
3. A SourceForge administrator has to edit the `avail` file to include the user name and module name(s) required for read/write access.
Integration with Eclipse
The development IDE and target platform chosen for the project is Eclipse. The Eclipse IDE workbench ships with a built in CVS client which is fully integrated into the Java development process. This makes it extremely convenient for developers to synchronize their workspace with the CVS repository and to monitor history, annotations and file comparisons within the IDE. Thus, no other CVS client is needed to perform all common CVS tasks.

Repository details
The SourceForge CVS connection details are as follows:

Web Page: http://sourceforge.net/cvs/?group_id=159487
Host location: tencompetence.cvs.sourceforge.net
Repository Path: /cvsroot/tencompetence
Connection type: extssh
Public User Name: anonymous

Modules and folder structure
All code is deposited under the “HEAD” CVS location. For Work Package 3 for example the code is placed at the top level under HEAD, while other Work Package code is placed in appropriately named subfolders (“wp6”, “wp7”, “wp8”, and so on).

The naming convention for a code module for the TENCompetence client application is the project namespace (org.tencompetence.tencc) followed by the module name, as follows:

org.tencompetence.tencc.modulename

Where “modulename” is an appropriate name of the module.

As an example, if one had a module named "org.tencompetence.myproject" that came under the remit of WP5 then a developer using Eclipse would perform the following steps:

1. Right-click on the Project in the Package Explorer in Eclipse
2. Choose Team->Share Project...
3. Select the 10Competence Repository
4. Choose "Use specified module name" which would be wp5/org.tencompetence.myproject

JUnit folder structure
JUnit tests relating to a module should be organised in a separate module that maintains a mirror package structure of the original module. This ensures that the main module does not have to link to or contain the JUnit.jar library, and also so that users can check out the code without having to get the tests as well, these remaining optional in the corresponding JUnit tests module. This is the practice that the Eclipse development team use themselves.
For example, a plug-in module called org.tencompetence.tencc would have its tests in a separate module called org.tencompetence.tencc.tests and the package structure would be as follows:

The original module:

```
org.tencompetence.tencc
   ----src
   ----org.tencompetence.tencc
   ----package1
   ----package2
   ----package3
```

And the JUnit test module structure:

```
org.tencompetence.tencc.tests
   ----src
   ----org.tencompetence.tencc
   ----package1
   ----package2
   ----package3
```

For more information on JUnit and package structures, see the section on Unit testing.

**Other considerations when using folders**

The "bin" folder and any folders that contain compiled code files (*.class files for Java) should be excluded from the CVS, as it should only contain source files and binary library files.

3rd party libraries can be uploaded to CVS (together with their licences) provided that a version number is used as part of their file name or set in the Eclipse manifest if it is delivered as a “wrapped” Eclipse plug-in. Versions of popular libraries can vary enormously. JDOM 1.0 is *very* different to JDOM 0.9. The same goes for Tomcat - some things work fine for 5.5, but not for version 5.0. Name the file jdom-1.0.jar, not jdom.jar.

Note that modules can not be deleted permanently by users. For this to happen a formal request has to be submitted to the SourceForge technical support team by a project administrator. This process can take a few days to complete.
House Rules CVS repository

In order to maintain good housekeeping for using the CVS repository in the project the following rules have been put in place:

1. Code should be committed on a regular base to be available for inspection and use by other developers, WPs and the outside world – preferably daily when working on the software
2. Committed code should at all times be able to be compiled.
3. Committed code should at all times be able to be run.
4. Developers should check out the latest code from CVS before committing their own changes
5. Any code conflicts should be resolved between developers preferably informally, but failing that via a project co-ordinator
6. Folders (a.k.a "modules") should not be created under CVSROOT but only directly under HEAD. See above for more details as to folder structure.
7. Module naming conventions should be followed, see above
8. JUnit tests should be given their own modules, see above
9. Compiled class files and the compiled output folder (usually “bin”) should not be added to the CVS. Only source files and libraries can be uploaded.
10. Library files should be named according to their version and/or the Eclipse manifest version number set accordingly.

Intake procedure by WP3 for new components

1. Place code, packaged component(s) and documentation on the SourceForge repository (https://sourceforge.net/projects/tencompetence).
2. Send a formal request to WP1 for intake of the component, using the Intake Request form from the appendix.
3. WP1 asks WP3 to do an intake.
4. WP3 assigns one or more persons to do the intake.
5. The intake result is checked by the WP3 leader. When needed, the intake result is discussed internally in WP3.
6. Intake results are sent to WP1 and the Aspect WP's requester. The result, which is accompanied by a brief explanation, can be "accept", "accept, after revision" or "reject".
7. When the requester disagrees with the result, an appeal can be sent to WP1. The appeal will be handled by the WP3 leader and representatives from WP1 and the aspect WP.

After receiving the request from WP1, WP3 will perform the intake within 3 weeks. Problems with the provided software and/or documentation can extend this period.

Going through the procedure should be smooth and swift most of the times, because WP3 will be co-operating more closely with the aspect work packages after the first release. This co-operation results in early detection of integration problems (thus preventing them to pop up during the intake) and already prepares WP3 for the intakes they will be handling.
Intake procedure for updated components

Not only new components need an intake. Changes to an existing component can introduce new problems. For this reason updated components go through a new intake.

When the architecture and functionality haven’t been changed radically, acceptance of updated components will be quick.

When a component is only updated for a bug fix, the intake procedure will not be used. Reporting the bug and an explanation of its fix in Bugzilla suffices.

When a component is updated for functional extensions, performance improvements, etc. the following steps are taken:
1. Provide a list of changes, to describe what has been changed since the last submission.
2. Further steps are the same as for 'Procedure for new components'.

Guidelines for checking a component

Before starting the intake, the presence of the following items is checked:
1. Test descriptions and results (unit tests and/or module tests).
2. API documentation.
3. Functional description of the component.
5. Availability of the software.
6. Additional for updated components: change list.

If one of these items is not present or has insufficient quality, the intake is postponed until a reasonable version of all items has been received.

Checklist

Does the API documentation describe at least:
1. Used communication protocol(s): RMI, HTTP, CORBA, SOAP, …
2. Method signature: input and output parameters, name of the method
3. Used data format(s): XML, CSV, custom format, …
4. Error codes and explanations
5. Pre conditions (requirements for the state when starting the execution)
6. Post conditions (description of the result and end state when the execution is complete)
7. General description for each method: what it does / what its purpose is.

Software:
- Has the software been tested with a real user group?
- Does the component conform to the developer guidelines from deliverable D3.1 – Architecture Design Document (available at http://dspace.ou.nl/handle/1820/882)?
- Are the licenses of the Aspect’s component and its used external libraries / components compatible with the BSD license?
- Have external beta or alpha versions of libraries / components been used?
If unit tests are present: perform these.
If module test result are present: check these.
System test description and results available?
Is a list of open bugs, including their priorities, available?
What problems and/or bugs do you encounter when running the software?
Is the performance of the component acceptable?
Is the code integratable without the need for the sources?
Is it clear how the component should / can be integrated (perhaps by a provided integration explanation)?
Which changes have to be made to existing WP3 code to integrate the code? Normally only minor changes to WP3 code are acceptable. The Aspect WP has to make sure its component fits well into the WP3 structure.

Items to consider when looking at coding quality:
- Correct use of Object Oriented programming (e.g. clear separation of concerns, inheritance, interfaces, …)
- Put all the code in TENC CVS.
- Proper use of try/catch and managing of Exceptions.
- Javadoc (or Javadoc like for non-Java software) comments.
- Inline comments, to explain what code is doing.
- Java source code conventions (e.g. Eclipse, D3.1).
- Human readable variable names.
- Indentation.
- No dead code.
- Efficient code (to be judged by an experienced programmer).
- No hard coded values (for items that might change in the future).
- Are code comments and documentation available in English?

**Intake Request form**
This form is used for the formal request from an Aspect WP to WP1 to intake a component.

<table>
<thead>
<tr>
<th>Aspect WP &lt;5/6/7/8&gt;</th>
<th>Request date &lt;dd-mm-yyyy&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact details for general questions</td>
<td></td>
</tr>
<tr>
<td>Contact details for technical questions</td>
<td></td>
</tr>
<tr>
<td>Location of the software (base URL(s) + description)</td>
<td></td>
</tr>
<tr>
<td>Location of the documentation (URL(s) + description)</td>
<td></td>
</tr>
<tr>
<td>Other comments (optional)</td>
<td></td>
</tr>
</tbody>
</table>
Intake Feedback form
This form is used by WP3 to report the results of their intake for a component to WP1 and the Aspect WP that built the component.

<table>
<thead>
<tr>
<th>Intake performed by: &lt;name(s)&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake results</td>
</tr>
<tr>
<td>Intake completion date</td>
</tr>
<tr>
<td>Brief explanation of the results and required revisions</td>
</tr>
<tr>
<td>Intake comments (for checklist see above)</td>
</tr>
</tbody>
</table>

Component Owners
Each component or other coherent piece of software in the TENCompetence system will be assigned a Component Owner. The Component Owner is the organisation, university, or company that created it. When a component requires changes from a non-Component Owner, any changes should be discussed with the Component Owner first. The Component Owner decides how to handle changes. For example, a developer working on a QTI tool that requires changes to the central data API, would have to contact Harrie Martens or Hubert Vogten. Depending on the required changes Harrie or Hubert could either

- update the central data API, or
- allow the developer to make the changes herself, or
- allow the developer to submit a patch file.

References and Links:
CVS Home Page - http://www.nongnu.org/cvs/
SourceForge and CVS - http://sourceforge.net/docs/E04/
TENCompetence SourceForge - http://sourceforge.net/projects/tencompetence
Eclipse – http://www.eclipse.org

Licensing
In TENCompetence we always apply an OSI license (http://www.opensource.org/licenses). Preferably this is the New-BSD, 3 clause license (see http://www.opensource.org/licenses/bsd-license.php). This license is used in case the code is completely developed by TENCompetence, and in all other
possible cases. The TENCompetence Foundation is to be included as the <OWNER> in this license.

In cases where it is not possible to use the BSD license, e.g. because we reuse existing software libraries that do not allow BSD, we have to look for the best suitable OSI license on a case-by-case basis.

The OSI license needs to be referenced in all software code when this is uploaded to the SourceForge Concurrent Version System (CVS).

Here is the BSD license template:

```plaintext
Copyright (c) 2008, TENCompetence Foundation Board

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
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```
9. Risk management

Risk management in TENCompetence takes place at three levels:
1. At the strategic level. Risk management here concentrates on the relation between the project and the consortium with its environment. Risk management at this level is the responsibility of the Consortium Board.
2. At the tactical level. Risk management here concentrates on the Work Packages’ contribution to the project objective. Risk management at this level is the responsibility of the Executive Committee.
3. At the operational level. Risk management here concentrates on the activities within the work packages, which is the responsibility of the work package leader.

During the first twelve months of the project, an elaborate risk analysis and contingency planning procedure was implemented. Looking back, this was overdone. The following procedures and tools proved sufficient for risk management:
- Monitoring through the three-monthly Activity Reports (see chapter 2).
- The TENCompetence assessment protocol to quantify partners’ scientific outputs (chapter 3)
- The quality assurance procedure for internal deliverables and deliverables (chapters 4)
- The software development procedures and standards (chapter 8)
- The project workshops, on average every three months, with all project partners somewhere in Europe.
- The Moodle on-line project environment where all WPs discuss and present their day-to-day activities.