

Learning Networks for Lifelong Competence Development

Citation for published version (APA):

Koper, R. (2006). *Learning Networks for Lifelong Competence Development*.

Document status and date:

Published: 13/06/2006

Document Version:

Peer reviewed version

Document license:

CC BY-SA

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

Take down policy

If you believe that this document breaches copyright please contact us at:

pure-support@ou.nl

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 08 Oct. 2021

Open Universiteit
www.ou.nl



Learning Networks for Lifelong Competence Development

Rob Koper

Open University of the Netherlands

7 – 6 – 2006, Bled Slovenia

PROLEARN Summer School



TEN Competence

Building The European Network for Lifelong Competence Development

Some background

Research into Advanced Learning Technologies at OUNL

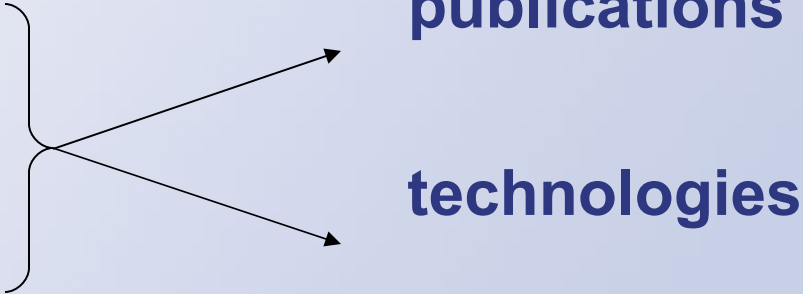
- Programme 'Learning Networks for Lifelong Learning'
- Themes (2003-2008):
 - a. Author and Use Learning Activities & Units of Learning
 - b. Positioning in Learning Networks
 - c. Navigation in Learning Networks
 - d. Social Software in Learning Networks
 - e. Learning Networks Integrated
- Co-ordinator of the EU Integrated project TENCompetence. Partner in Prolearn.



TEN Competence

Building The European Network for Lifelong Competence Development

Overview of the Lecture

- Short introduction into our research agenda (similar as the agenda of the TENCompetence project)
- Short introduction into the research approach:
 - Modeling
 - Simulation
 - Software Development
 - Empirical validation

publications

technologies
- Introduction and discussion of a new Model of a Learning Network for Lifelong Competence Development
- Resources: <http://dspace.ou.nl> (*learning networks section*)



TEN Competence

Building The European Network for Lifelong Competence Development

**In our research we aim to develop
integrated methods & tools
(an 'infrastructure')**

to support the authoring and use of

Learning Networks

for Lifelong Competence Development



Keywords

Learning Networks

Competence

Formal & Informal Learning

Sharing

Authoring

Learning Activities

Knowledge Resources

Self-organised

Learning Routes

Lifelong Learning

Units of Learning

Learning Design

Navigational Support

Open Source

Open Standards

Service Oriented Architecture

Learner Support

Positioning Support



TEN Competence

Building The European Network for Lifelong Competence Development

Social Software

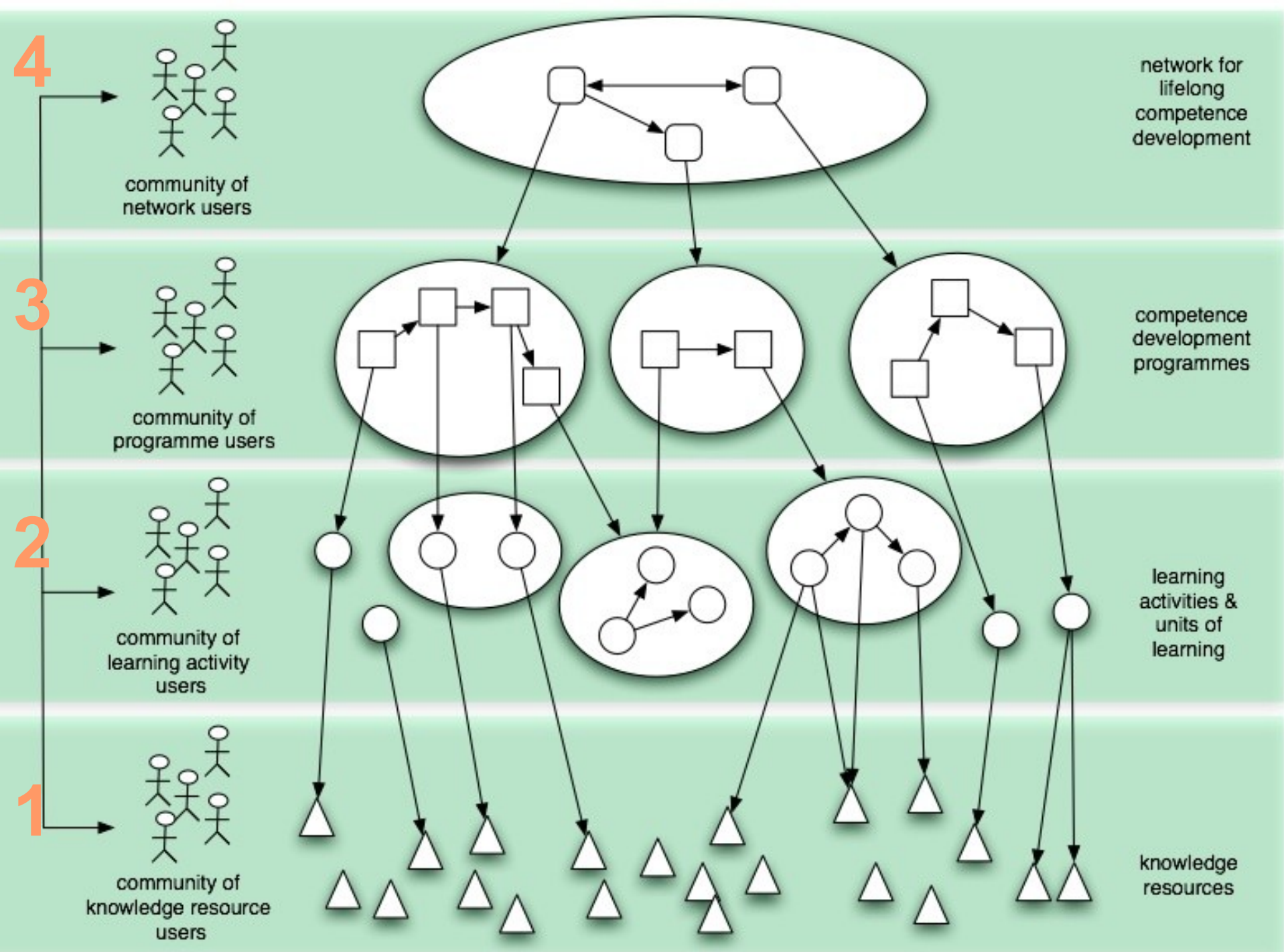
7 Requirements for the infrastructure

1. Develop and integrate new pedagogical & organisational models for lifelong competence development (informal/formal, competence based)
2. Develop and integrate services to help the learner to find the best suited and adapted learning solution
3. Stimulate the pro-active sharing of learning resources
4. Support Competence Assessment
5. Provide effective & efficient user support
6. Stimulate decentralised, self-organised management
7. Integrate 4 different worlds of models, standards, services and tools



TEN Competence

Building The European Network for Lifelong Competence Development



Research Approach in General

Phase 1: Modelling

- Analysis (literature, needs, ...)
- Develop conceptual models (‘technological theory’) to:
 - a. Define the scope
 - b. The user requirements
 - c. The vocabulary used
 - d. The overall architecture
- Standard modelling notation needed (we use UML)
- Sometimes these models are further elaborated to standards specifications (example Educational Modelling Language -> IMS Learning Design specification)



TEN Competence

Building The European Network for Lifelong Competence Development

Research Approach

Phase 2: Simulation

- A simulation programme can be created when needed to refine the model or to explore complex dynamic relationship between the variables in the model
- Example: Multi-agent simulation to study the effect of collaborative filtering as a navigational support for learners in an informal learning network
(see: Koper, E.J.R. (2005). Increasing Learner Retention in a Simulated Learning Network Using Indirect Social Interaction. *Journal of Artificial Societies and Social Simulation* , 8(2), 1.1-5.6.)



TEN Competence

Building The European Network for Lifelong Competence Development

Research Approach

Phase 3: Developing Software

- We develop Open Source Software because of its fit to the purpose of scientific work:
 - publish it in source forge
 - allow peer review
 - allow replication
 - allow further elaboration
 - provide justification for the work at the level of the artefact itself
- Examples: CopperCore (IMS LD runtime engine), TENCC (in early stages of development)



TEN Competence

Building The European Network for Lifelong Competence Development

Research Approach

Phase 4: Empirical Validation

- Experiments with the software with real users
 - a. In controlled laboratory settings to focus on internal validity of the model
 - b. In field studies to focus on the external (ecological) validity
- Comparison between the results of the simulation model and the results obtained in real practice (see Janssen, J. et al (in press). Self-organising navigational support in lifelong learning: how predecessors can lead the way. Computers & Education).



TEN Competence

Building The European Network for Lifelong Competence Development

Publications

- Software through sourceforge.net
- Journals in the field of ALT/TEL:

List of high quality journals & publication policies is maintained by the TENCompetence scientific committee.

See (in development):

http://145.20.177.141/mediawiki/index.php/Advanced_Learning_Technology_Journals

- We are working on an approach for conference papers (end of the year)



TEN Competence

Building The European Network for Lifelong Competence Development

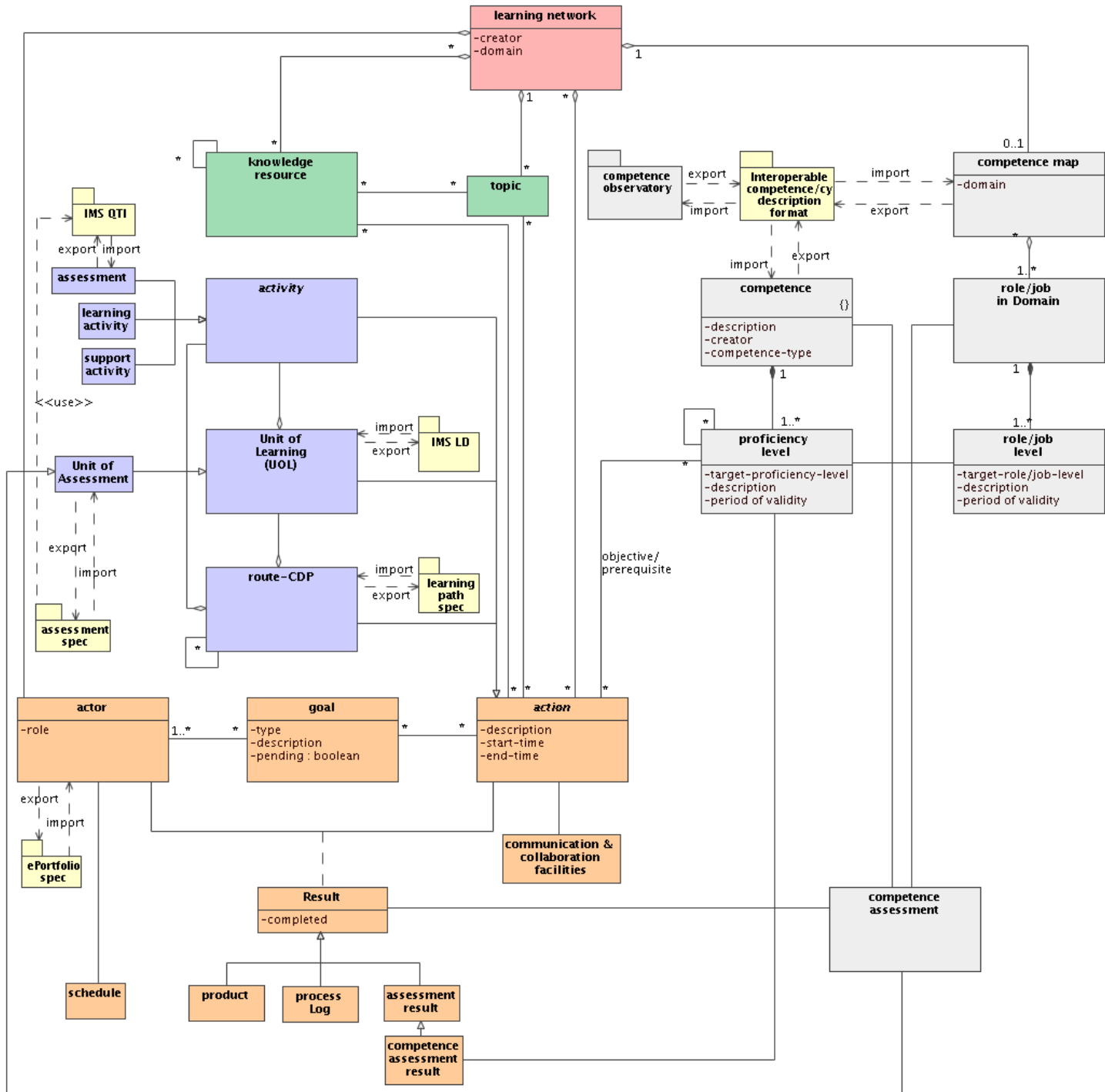


Learning Networks Domain Model

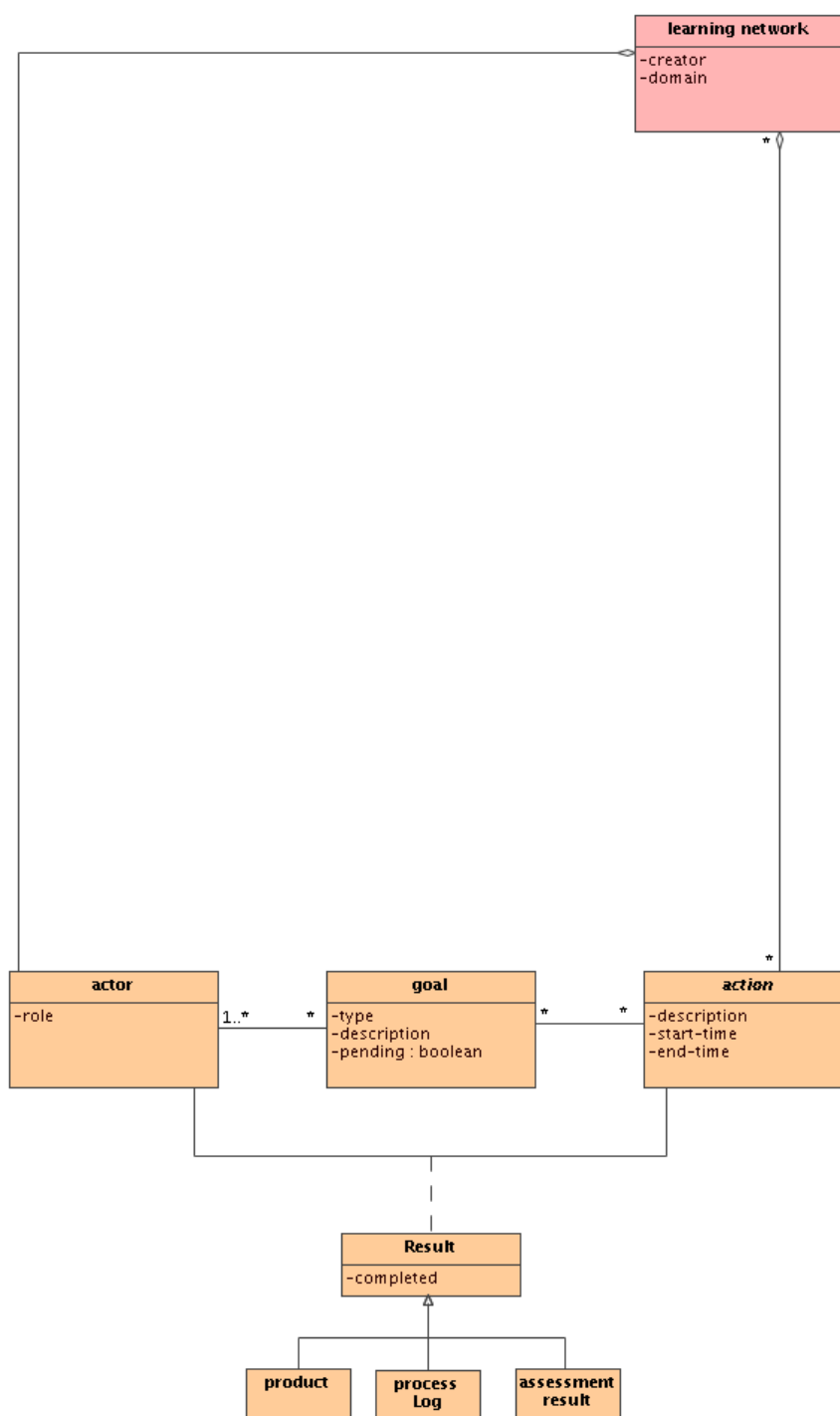


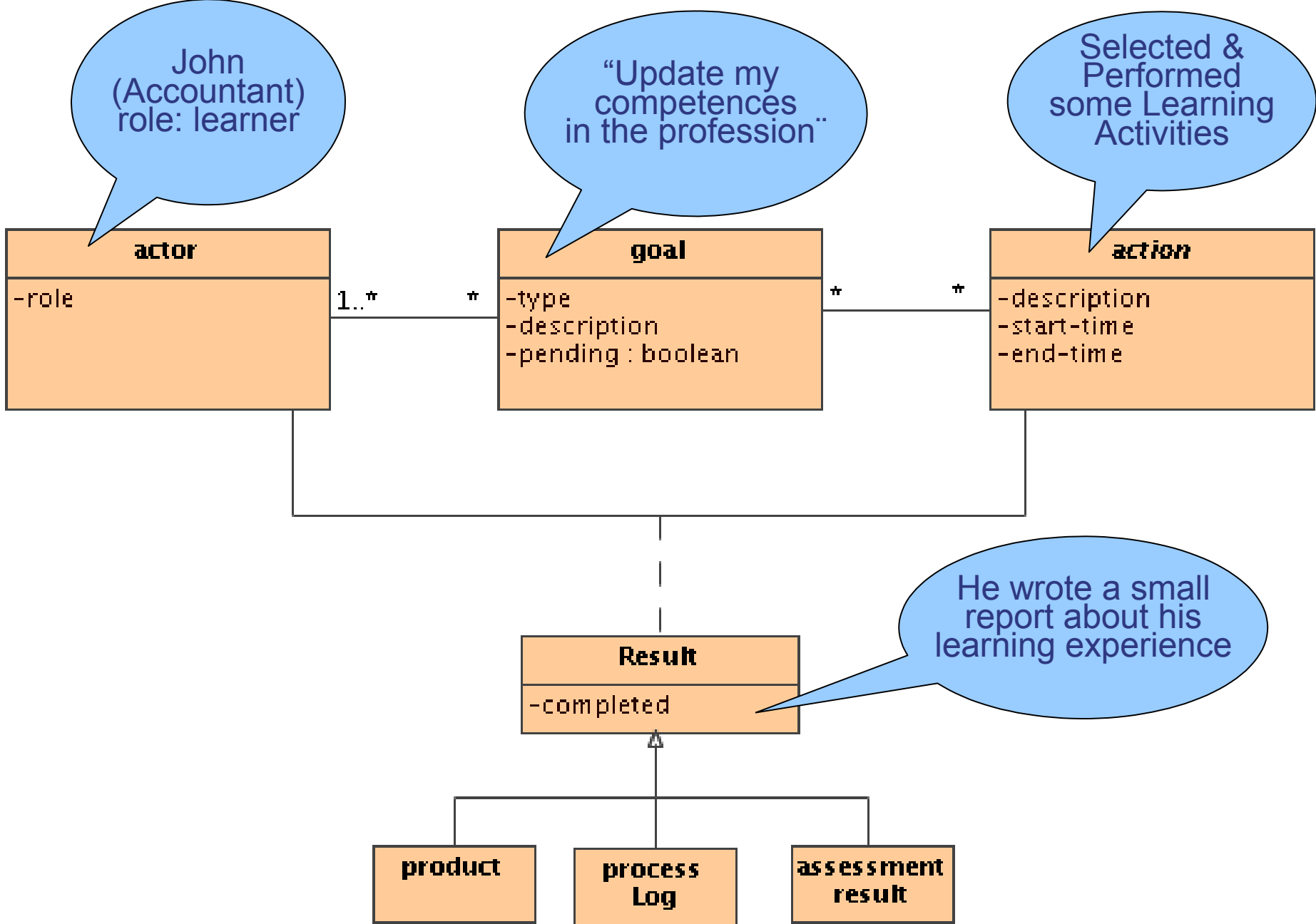
TEN Competence

Building The European Network for Lifelong Competence Development

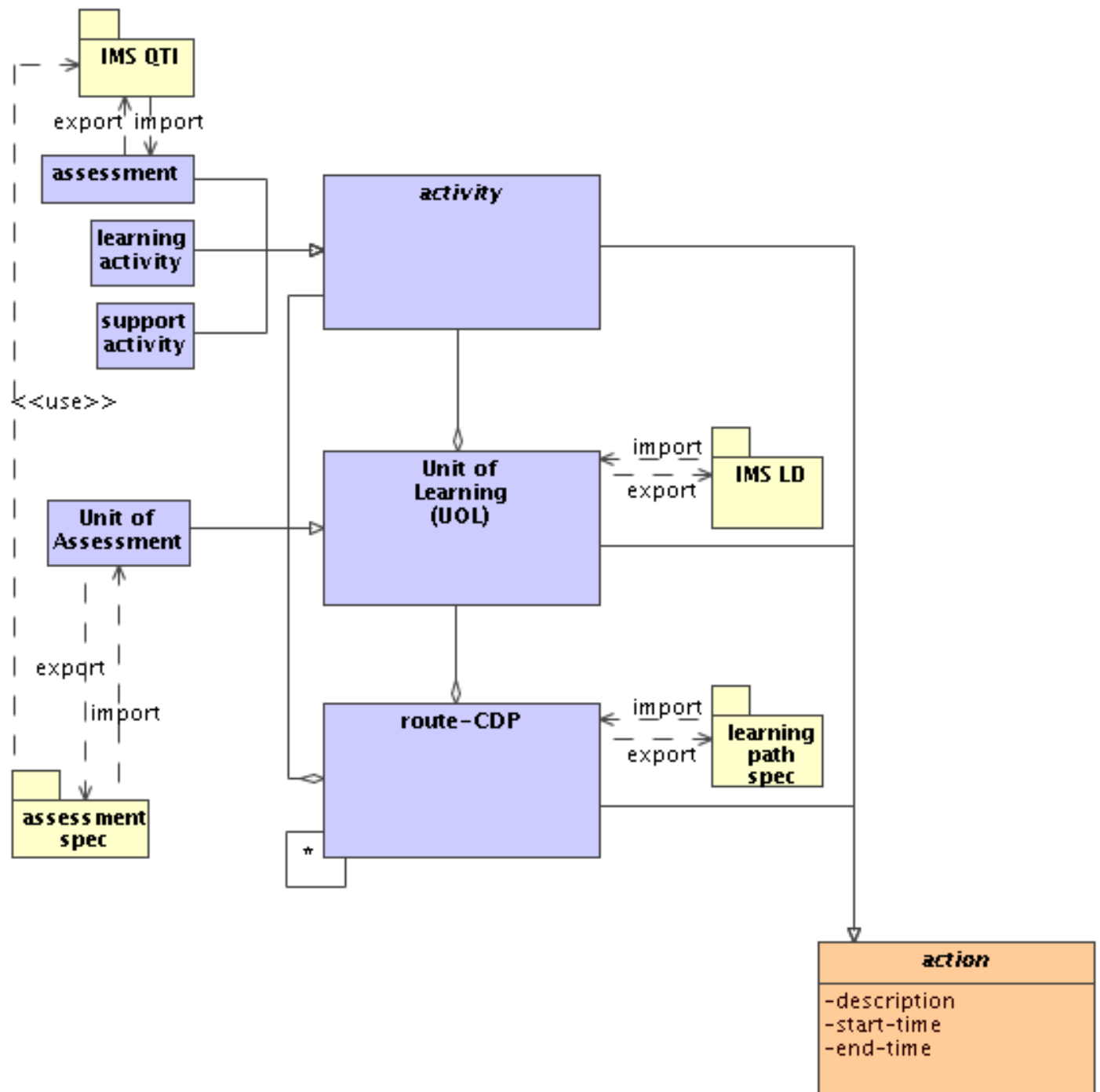


Core of the Model

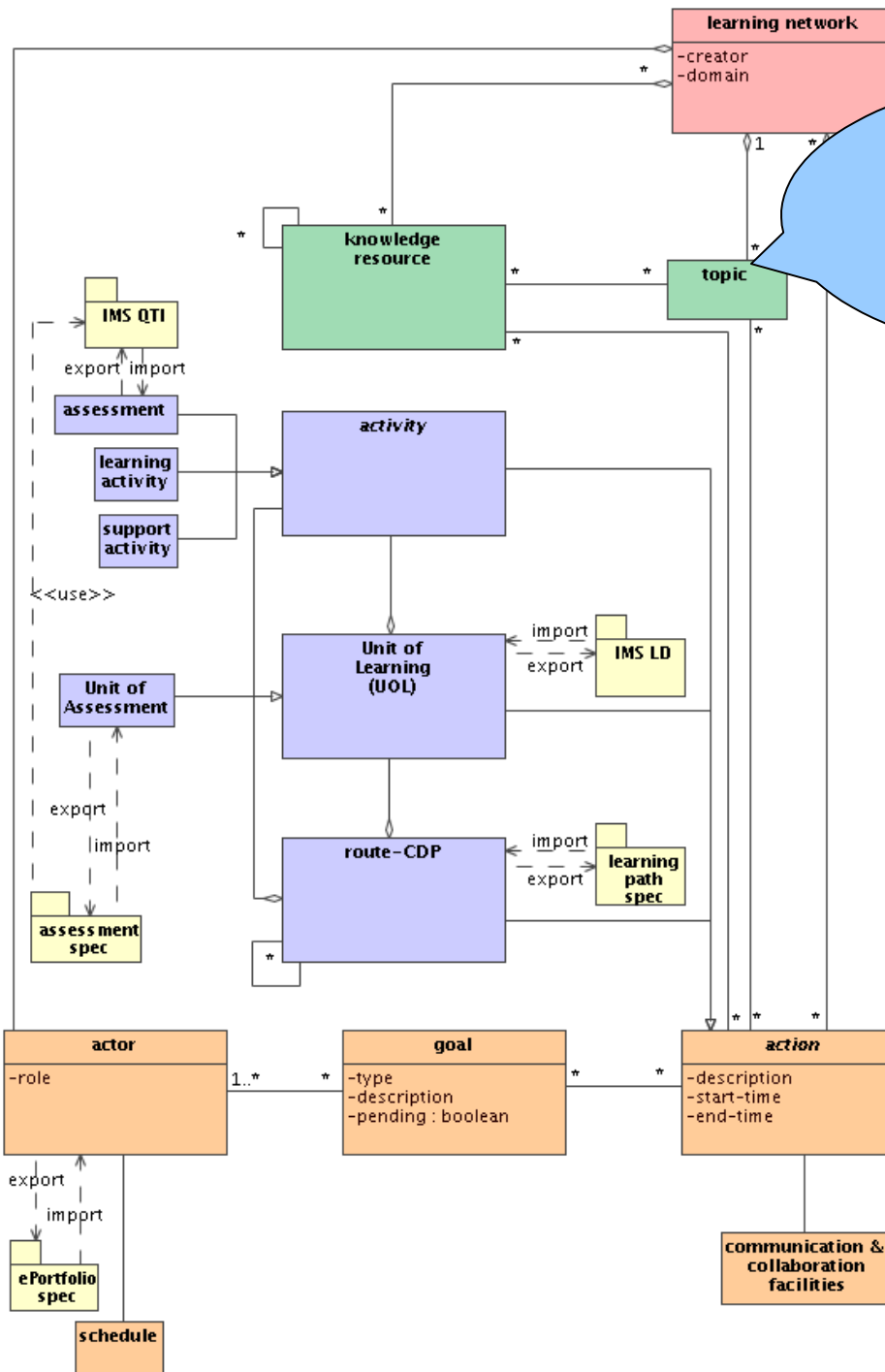




ACTIONS



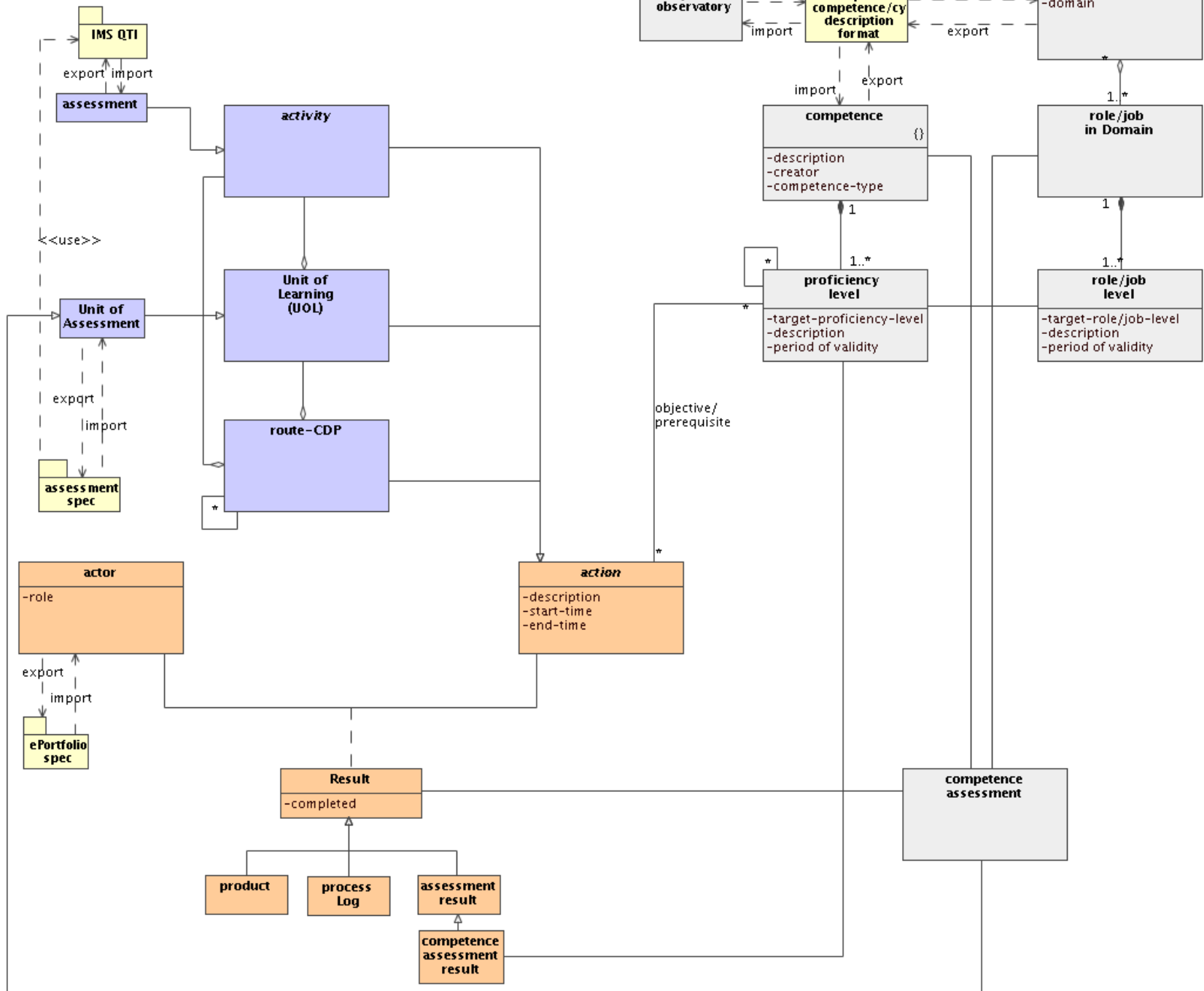
Knowledge Resources



Organisation:

- Keywords
- Index
- Topic Map
- Ontology
- ...

Competence



Example Optician's competences

Role/Job: Optician (<http://online.onetcenter.org/link/summary/29-2081.00>)

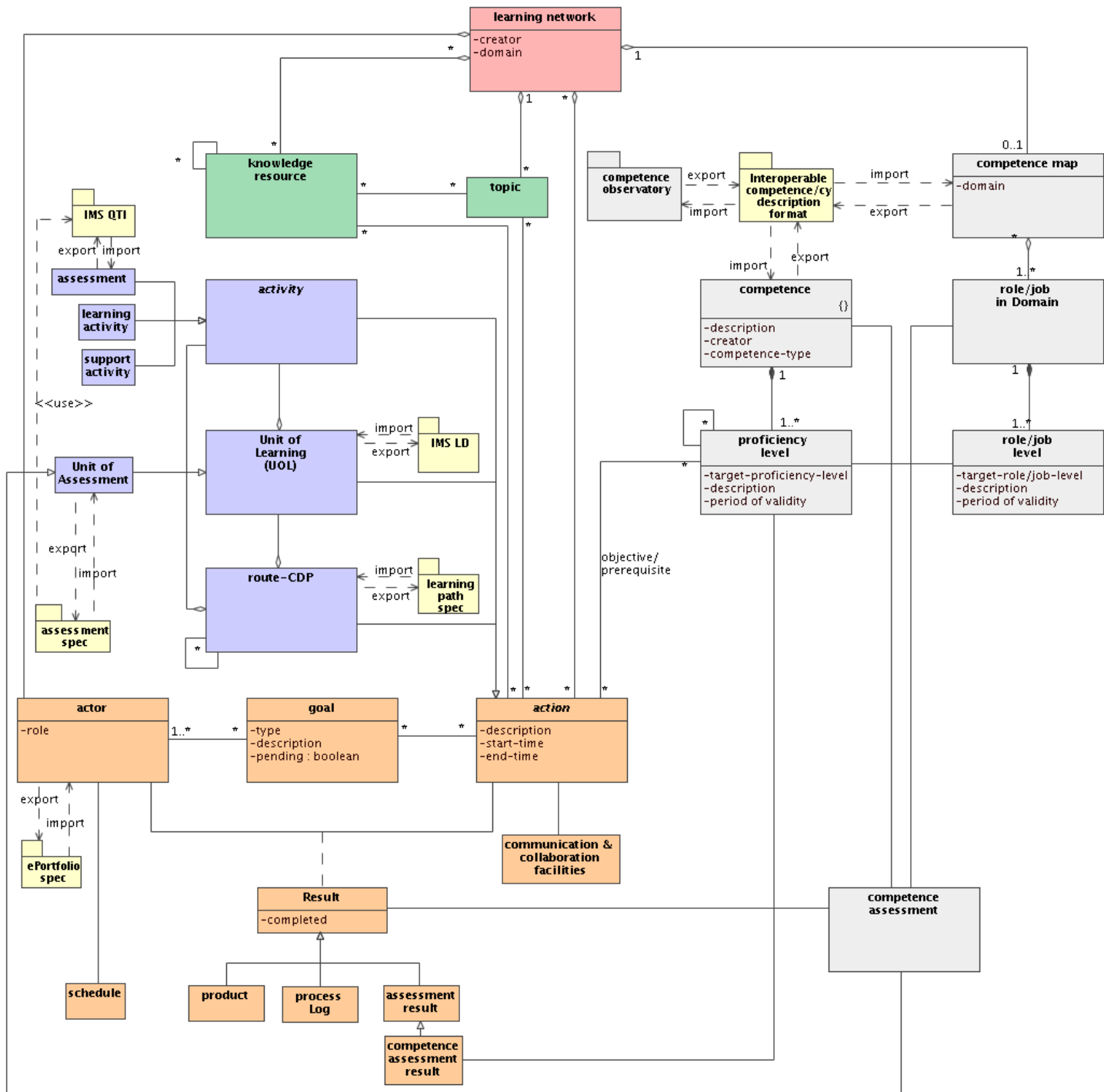
Competences:

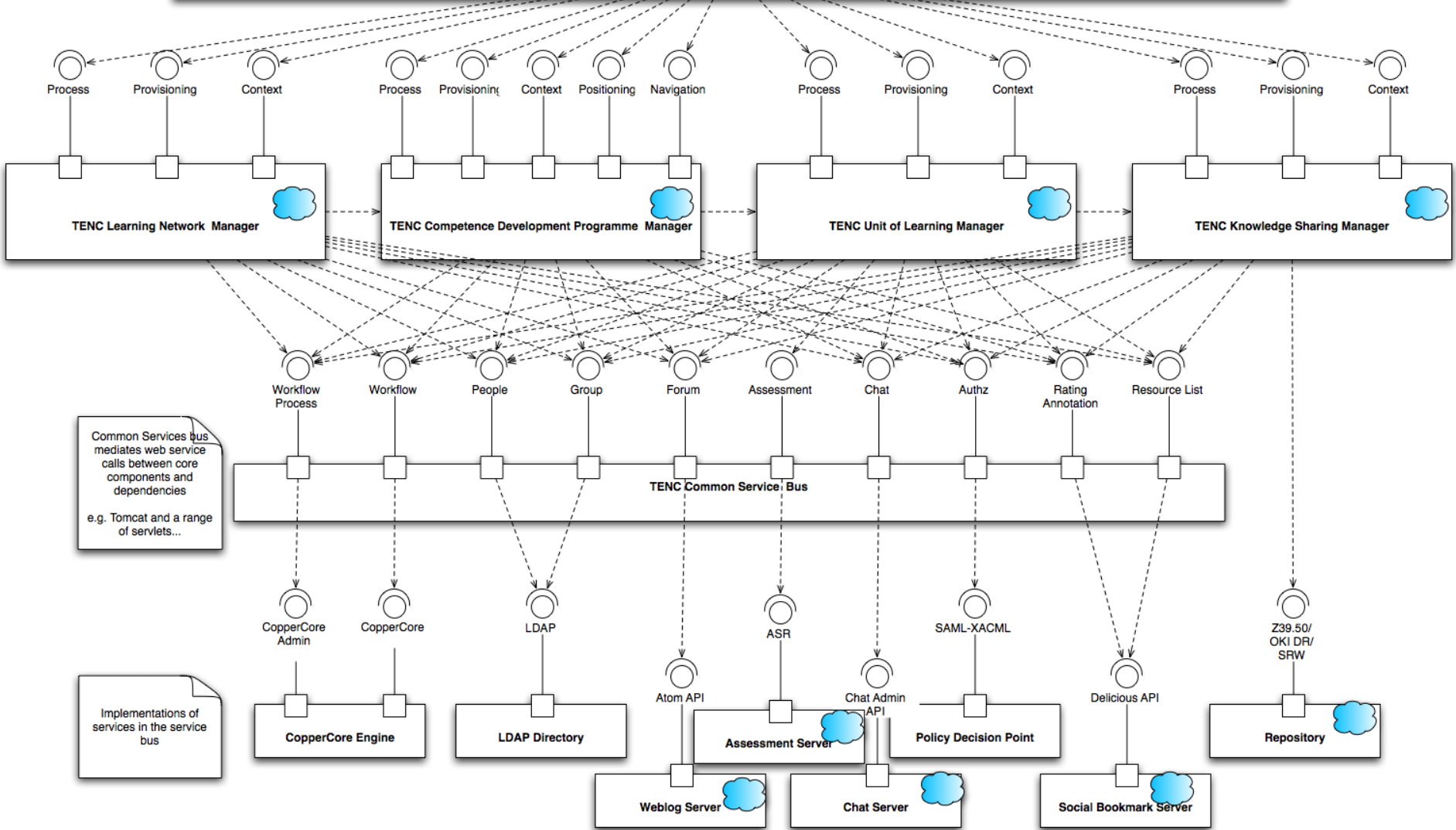
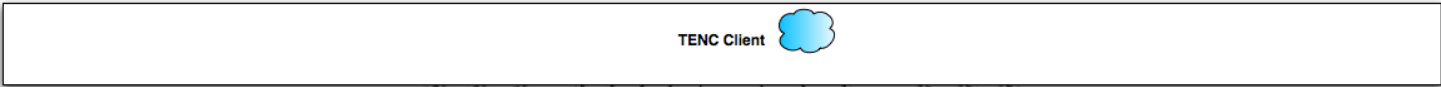
- Measure clients' bridge and eye size, temple length, vertex distance, pupillary distance, and optical centers of eyes, using measuring devices.
- Verify that finished lenses are ground to specifications.
- Prepare work orders and instructions for grinding lenses and fabricating eyeglasses.
- ...



TEN Competence

Building The European Network for Lifelong Competence Development





Identification of Research issues in next session



TEN Competence

Building The European Network for Lifelong Competence Development

References

www.ou.nl

www.learningnetworks.org

www.tencompetence.org

<http://dspace.ou.nl> (preprints)

<http://hdl.handle.net/1820/649> (most recent version of domain model)

Thanks!