LEONARDO DA VINCI
MULTILATERAL PROJECTS - TRANSFER OF INNOVATION 2011,

Project n.: CZ/11/LLP-LdV/TOI/134005

Project name: Vocational Training in Assessment of Existing Structures

Minutes

of the third plenary meeting of partners
held in Barcelona, at the Polytechnical University of Catalonia, UPC
CIMNE TECNOLOGÍA, S.A.
C/ Gran Capitán, 2-4, Building NEXUS, Meeting room 103, 1st floor
on June 14 - 15, 2012,
and tri-lateral meeting of P1, P3 and P4 on June 16, 2012

Participants:

P1 (contractor) – CTU KI: M. Holický, Jana Pallierová
P2 - SPSS: apologized
P3 – HR: Dimitris Diamantidis
P4 – IETcc-CSIC: Peter Tanner
P5 – UOP: Pietro Croce
P6 – TNO: Ton Vrouwenvelder
P7- PAU: Mehmet Inel

PPT presentation LEO, 3.meeting, used during the meeting, supplements these minutes.

Thursday 14/06/2012, 3 – 7 p.m.
Friday 15/06/2012, 9 a.m.- 3 p.m.

1) Opening of the meeting
P1 (M. Holický) opened the meeting and welcomed the participants.
P2 (R. Gottfried) apologized for time reasons.

2) Upcoming meetings and seminars

Partners started the agenda with specifying terms of the upcoming events:

- 4th plenary meeting at Hochschule Regensburg – Thursday 11/10/2012 (1 – 6 p.m.)
  2nd international seminar at Hochschule Regensburg – Friday 12/10/2012 (9 a.m. – 1 p.m.)
- 5th plenary meeting and 3rd international seminar at the University of Pisa
  Thursday and Friday 14–15/03/2013
- 6th plenary meeting and 4th international seminar at Pamukkale University, Denizli
  Thursday and Friday 06-07/06/2013
- 7th plenary meeting and 5th international seminar at Klokner Institute, Prague
  Thursday and Friday 26-27/09/2013

3) Reflection of the seminar – recommendations for the next seminars:

- to avoid overlapping of topics,
- to switch the presentations Basic Concepts - P1 (M.Holický) and Codes and Recommendations - P3 (D.Diamantidis)
- to harmonize terminology – to stick to Eurocode notation – to use official units,
- P5 (P.Croce) and P7 (M.Inel) – to indicate links to theory,
- P5 (P.Croce) – to reduce text in slides by using bullet points,
- case studies may include timber structures instead of earthquake in the seminar in Regensburg,
- P4 (P.Tanner) will send to P1 (J.Pallierová) a list of seminar participants including their registering e-mails.

  All partners will e-mail to P5 (P.Tanner) and P1 (J.Pallierová) pdf version of their PPT presentations of the seminar (2 slides per page). Presentations will be posted on the project website.

4) Program of the seminar in Regensburg

09:00 *Opening and introduction,* D. Diamantidis, Milan Holický
9:15 *Basic concepts,* Milan Holický
9:45 *Reliability aspects,* Ton Vrouwenvelder
10:15 *Codes and Assessment Procedures,* Dimitris Diamantidis
10:45   11:00 *Coffee break*
11:00 *Case studies,* Pietro Croce, Peter Tanner, Selcuk Toprak
12:15 *Discussion and closure,* D. Diamantidis, Milan Holický

Authors of "Case studies" should add to their presentations links to theoretical basis.

5) Handbook 1 (Responsible person: P3-D.Diamantidis)

Chapter 5 (STRUCTURAL ASSESSMENT)

Existing draft of Chapter 5 will be switched to Handbook 2. Theoretical part should be extended by P3 (D.Diamantidis), who will send his proposal to P6 (T.Vrouwenvelder), who will adjust it and send the new text to P5 (P.Croce) for its final refinement **(by 01/08/2012).** P5 (P.Croce) will also prepare brief introduction of Chapter 5 of HB 1 referring to the practical part (Chapter 5) of Handbook 2 **(by 30/06/2012).**

Chapter 8 (PROOF LOADING)

Only concepts (4-5 pages) will be left in Handbook 1, referring to ISO 13822 and ISO 2394 being substantial background documents. Practical part of the so far-made draft of this chapter will be switched to Handbook 2. P4 (P.Tanner) will supplement the text with types of testing and materials, basic variables and proof testing of structures. The term "probability" should be used instead of "risk".

Chapter 12 *(in preliminary contents)* (**SEISMIC RETROFIT**) will be switched from Handbook 1 to Handbook 2.

Partners agreed on the following contents of the Handbook 1 and relevant partners´engagement:

1. **BASIC CONCEPTS, TERMINOLOGY (P1, P4)**

2. **CURRENT STANDARDS (P3, P6)**

3. **REQUIREMENTS ON PERFORMANCE – P1**

4. **ASSESSMENT PROCESS - P3, P6**

5. **STRUCTURAL REASSESSMENT - P5**

6. **PROBABILISTIC ASSESSMENT – P1**

7. **RELIABILITY UPDATING – P1, P3**

8. **PROOF LOADING – P7, P4**

9. **ACCEPTANCE CRITERIA – P3, P6**

10. **COST OPTIMIZATION – P3**

11. **CONCLUDING REMARKS – P3**

12. **ANNEX A: BAYESIAN TECHNIQUE – P1**

The deadline for sending final versions of chapters to P3 (D.Diamantidis) is **31/07/2012**. Chapters that will not be sent by this time will be removed from the book.
The importance of making references between chapters and also cross-references between handbooks was pointed out.

6) Handbook 2 (Responsible person: P5-P.Croce)

Partners are of one mind that the book should be an operational technical guidance for practical use. A more detailed scheme of the chapters and responsibilities of individual partners were outlined. Partners commented on and amended P5 (P.Croce´s) draft of the contents as follows:

1. **INTRODUCTION (P1, P4, P5)**

2. **PLANNING OF ASSESSMENT (P5)**
   - documentation search and study
   - preliminary and detailed inspection and investigation
   - preliminary material testing
   - measurements,
   - evaluation of the results

3. **VERIFICATION PROCEDURE (P3, P6)**
   specification of partial factors, required reliability level (target beta) and performance, cross reference to chapter 3 of HB 1, partial factor mothods, reliability assessment, reliability updating, robustness and integrity

4. **TECHNIGUES FOR INSPECTION AND MONITORING, NDT (P4, P5, P7)**
   visual inspection, measurements of geometry, deformations, cracks opening, corosion, NDT, detail measurements, location of bars, foundation

5. **UPDATING OF MATERIAL AND GEOMETRIC DATA (P4, P5)**

examples of prior or posterior distribution, examples concidering geometry, strenght of concrete, steel, masonry, timber

6. **UPDATING OF ACTIONS AND ACTIONS EFFECTS (P4, P3)**
   permanent actions, imposed load (change of use), snow, wind, earthquake

7. **CASE STUDIES CONCRETE STRUCTURE (P5, P4)**

8. **CASE STUDIES STEEL STRUCTURES (P6)**

9. **CASE STUDIES TIMBER STRUCTURE (P5)**

10. **CASE STUDIES – SEISMIC RETROFITTING (P7, P5)**

11. **CASE STUDIES - PROOF LOADING (P4, P5, P6, P7)**
    ISO 2394, 13822

12. **HERITAGE STRUCTURES (P5, P7)**
    ISO 13822, Annex I

13. **CONCLUDING REMARKS (P5)**

Partners will send first drafts of the chapters to P5 (P.Croce) by **31/01/2013**. Table of contens of each chapter will be ready by **11/10/2012** for the meeting in Regensburg. By **31/07/2012,** P5 (P.Croce) will remind partners of sending him more detailed contents of the chapters.

Chapter 3 (Verification procedure)
P3 (D.Diamantidis) will make cross reference to Chapter 3 of Handbook 1.

Chapter 11 (Case studies - proof loading)
Authors should keep consistency with ISO 13822 and 2394 unless they provide proper evidence.

7) Handbook 3 (Responsible person: P2-R.Gottfried)

Preliminary contents:

1. **INTRODUCTION (P1, P2, P3)**
   background materials, educational aspects, common practice, contents of B3, basic principles of assessment

2. **GENERAL FRAMEWORK OF THE ASSESSMENT (P1)**
   terminology, basic requirements for safety, serviceability and durability

3. **PROCEDURES OF ASSESSMENT (P2)**
   ISO 13822, general procedure, testing, previous performance

4. **STATISTICAL EVALUATION OF DATA FOR THE ASSESSMENT (P1)**
   materials, geometry, actions, deterioration, evaluation of test results, load-bearing capacity

5. **METHODS OF ASSESSMENT OF BUILDINGS (P1,P2,P6)**
   partial factors method, characteristic and design values, load combinations

6. **REPORT ON ASSESSMENT (P1,P2)**
   (ISO, HB1)

7. EXAMPLES (P2,P1,P3,P4,P5)

In more detail the contents of Handbook 3 will be discussed at the meeting in Regensburg. First draft of the Handbook 3 should be ready by **31/01/2013.**

8) Printing of handbooks
Then partners repeted responsibilities for editing and printing the handbooks.
HB 1 – **P3 (HR)** – September 2012 / **P1 (KI)** - Czech version
HB 2 – **P5 (UOP)** – June 2013 / / **P1 (KI)** - Czech version
HB 3 – **P2 (SPSS)** – June 2013

9) Software tools
Partners agreed on developing software tools as EXCEL spread sheets, or tools developed by other computer aided training programs (P1:3x, P2:2x, P3:2x, P4:2x, P5:3x, P6:1x, P7:3x)

10) E-learning
P3 (D.Diamantidis) will send P1 (J.Pallierová) some ideas (examples) for possible improvement the e-learning platform.

11) Background materials
P3 (D.Diamantidis) and P5 (P.Croce) will send P1 (J.Pallierová) the documents that they provide to CEN/TC250 and ISO TC 98.

12) Interim report
Key administrative rules were reminded by P1 (J. Pallierová), namely the documentation that all partners are supposed to submit to P1 (KI) with Interim Report by October 2012 (see slides 29-31 of PPT Leo, 3.meeting, which forms a part of these minutes).

13) Project budget
Partners pointed out the absence of P2 (SPSS CB) at the past two plenary meetings and suggested to open negotiation between P1 (M.Holický) and P2 (R.Gottfried) concerning re-allocation of travel budget of P2.

Saturday June 16, 2012, 9 - 12 a.m.

Participants:

P1 (contractor) – CTU KI: Milan Holický, Jana Pallierová
P3 (HR): Dimitris Diamantidis
P4 (IETcc-CSIC): Peter Tanner

1) Checking preliminary draft of 2 software tools (in excel)

2) Discussion of dissemination possibilities

- presentations/lectures on project results at European Universities
- preparation of common papers
- implementation of project results in consultancy cases
- implementation of project training material in courses (master courses)
- discussion in national committee meetings and with national organizations.

Barcelona, 16/06/2012   Minutes prepared by P1 (J. Pallierová)