



Preliminary report

on the study “*The impact of the Bologna process on civil engineering education and profession in Europe*”

Phase I: *Bologna process and the academic world*

At the Dubrovnik meeting of the ECCE Standing Committee on Education & Training it was decided to include in the work plan for 2013 the preparation of a study entitled: “*Impact of the Bologna process on civil engineering education and profession in Europe*”.

The Study will be produced in two phases:

Phase I: *Bologna process and the academic world*
(to be completed by May 2013)

Phase II: *Bologna process and the professional world*
(to be completed by October 2013).

For both phases is required the participation of ECCE members for conducting surveys.

Two surveys are proposed for the Phase I:

A. *Survey on the education system*

B. *Survey conducted among academics.*

A. Survey on the education system

12 ECCE members responded to the survey on the education system. Here are the results:

Question		Answer											
		CZ ¹	EE ²	IE ³	IT ⁴	GE ⁵	HR ⁶	HU ⁷	PL ⁸	PT ⁹	RO ¹⁰	SI ¹¹	TR ¹²
1.	How many education institutions are offering civil engineering programmes in your country	5	3	5 ¹³ 11 ¹⁴	~48 ¹⁵	10	5 ¹⁶	8	50	34	9	2	>100 ~120 ¹⁷
2.	Is there a differentiation among institutions the answer to the 1 st question was referred to YES NO	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>

¹ CZ, Doc. Ing. František Kuda, CSc., Vice-President ČSSI - Czech Institution of Structural and Civil Engineers

² EE, Erki Laimets, Vice-President of Estonian Association of Civil Engineers (EEL)

³ IE, Engineers Ireland, Damien Owens, Registrar

⁴ IT, CONSIGLIO NAZIONALE DEGLI INGEGNERI (CNI), Prof. Massimo MARIANI

⁵ GE, Georgian Society of Civil Engineers, Iuri Svanidze

⁶ HR, Barbara Karleuša – Member of the Committee for International Cooperation of the Croatian Chamber of Civil Engineers

⁷ HU, Hungarian Chamber of Engineers, P. Scharle, Professor Emeritus Széchenyi István University Hungary

⁸ PL, Prof. Zygmunt Meyer, Polish Chamber of Civil Engineers

⁹ PT, Prof. José F. G. Mendes, Ordem dos Engenheiro,

¹⁰ RO, Prof. Iacint Manoliu, UAICR Romania

¹¹ SI, dr. Branko Zadnik, Slovenian Chamber of Engineers (IZS), Section of Civil Engineers

¹² TR, Tugrul TANKUT

¹³ Universities

¹⁴ Universities of applied science

¹⁵ 39 Universities and 3 Polytechnics (all are State Institutes) and 6 private Universities recognized by the State (4 of them are telematic universities)

¹⁶ There are four faculties of civil engineering and one polytechnic that offer studies of civil engineering.

¹⁷ (>90 Civ Eng departments, evening programmes in >30)

3.	<p>If the answer to the previous question is YES, on which basis is made the differentiation? (Please tick. Multiple choices are possible)</p> <ul style="list-style-type: none"> on the belonging to the university system or to the non-university system on the degrees offered on other basis (please, specify) 	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> ¹⁸ <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> ¹⁹ <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> ²⁰
4.	<p>Was the structure of the civil engineering programmes changed as a result of the Bologna reform?</p> <p>YES NO</p>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
5.	<p>If the answer to the previous question is YES, in which academic year started to be implemented in your country the changes induced by Bologna in the structure of the civil engineering programmes?</p>	2004/ 2005	2002 ²¹	2005	1999		2005	2003	2008	2006	2005	2009	
6.	<p>Where the changes, to which the previous questions were referred to, introduced simultaneously in all higher education institutions?</p> <p>YES NO</p>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> ²² <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

¹⁸ Applied oriented (polytechnics) 4-year study does not give the degree.

¹⁹ In Croatia we have a binary system for civil engineering education [both university (academic) and vocational (professional) studies] and three cycles [undergraduate, graduate and postgraduate university (academic) programmes and undergraduate and specialist graduate vocational (professional) study programmes]. There are four faculties of civil engineering and one polytechnic that offer studies of civil engineering.

Faculties have the possibility to offer university and vocational study programmes. Polytechnics can offer only vocational programmes. Three Faculties offer both university and vocational study programmes on different levels. One Faculty offers only university study programmes and in the same city the vocational programmes are offered by the Polytechnic.

²⁰ (curriculum emphasis)

²¹ Before Bologna we had 4+2, after Bologna 5years integrated.

²² In Italy the academics reforms and integrated Bologna is no exception, are set and regulated by law and thus applicable to all the private recognized Universities and all the State Universities. The different degree courses are grouped into classes which characteristics and relevant learning outcomes are defined by law. This allows the corresponding diplomas to have the same legal value if they belong to the same "class"

7.	If the answer to the previous question is NO, in which academic year was completed the reform of civil engineering programmes?		year ²³					2005	2010	2009			
8.	<p>If, as a result of the Bologna reform, a system in cycles was introduced in your country, which was the system?</p> <ul style="list-style-type: none"> • 3 (Bachelor) + 1,5 (Master) • 3 (Bachelor) + 2 (Master) • 3,5 (Bachelor) + 1,5 (Master) • 4 (Bachelor) + 1 (Master) • 4 (Bachelor) + 1,5 (Master) • 4 (Bachelor) + 2 (Master) • (5 year) programme combining cycle 1 and cycle 2 and leading directly to a degree equivalent to Master • other (please, specify) 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9.	<p>One can speak on the existence in your country of different types of Bachelor programmes, such as “academic bachelor” and “professional bachelor”?</p> <p>YES</p> <p>NO</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	

²³ Applied oriented (polytechnics) 4-year study is not according to Bologna process as it does not give the degree?

²⁴ Applied oriented (polytechnics) 4-year study does not give the degree.

²⁵ Master degree in building Engineering/Architecture with State Exam in Civil Engineering or Architecture. Both the professionals (Civil Engineer and Architect) can enjoy the automatic recognition for the profession of Architect in Europe following the Title III, section 7 of the Directive 2005/36/EC

39 Universities and 3 Polytechnics (all are State Institutes) and 6 private Universities recognized by the State (4 of them are telematic universities)

In Italy the academics reforms, and Bologna is no exception.

Master degree in building Engineering/Architecture with State Exam in Civil Engineering or Architecture. Both the professionals (Civil Engineer and Architect) can enjoy the automatic recognition for the profession of Architect in Europe according to Title III, section 7 of the Directive 2005/36/EC

²⁶ (Unrelated to the Bologna reform, 4+2 cycle system was introduced in all universities in 1981. It was even older in some.)

10.	<p>If the answer to the previous question is YES, on which basis is made the differentiation? <i>(Please tick. Multiple choices are possible)</i></p> <ul style="list-style-type: none"> • on the basis of the type of institution offering the degree • on the basis of the curriculum of the programme • on other basis <p><i>(please, specify)</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ²⁷	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	<p>One can speak on the existence in your country of different types of Master programmes, such as “academic master” and “professional master”?</p> <p>YES</p> <p>NO</p> <p>Other</p> <p><i>(please, specify)</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ²⁸	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12.	<p>There is a system of credits used in your country for civil engineering programmes?</p> <p>YES</p> <p>NO</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13.	<p>If the answer to the previous question is YES, which system is used?</p> <ul style="list-style-type: none"> • ECTS • other <p><i>(please, specify)</i></p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> ²⁹

²⁷ Polytechnics can offer only vocational programmes.

Faculties have the possibility to offer university and vocational study programmes, so at the faculty the differentiation is made on the basis of the curriculum of the programme.

²⁸ We have **master of civil engineering** for students that graduate on the university (academic) graduate study programme and **vocational (professional) specialist of civil engineering** for students that graduate on the specialist vocational graduate study programme.

²⁹ **(lecture + lab, study excluded)**

6 ECCE members responded, through representatives of the academic community to the questionnaire built for the second survey. Here are the results:

B. Survey conducted among academics

Question		Answer					
		CZ ¹	IE ²	GE ³	HU ⁴	RO ⁵	SI ⁶
1.	Do you consider that the changes induced by the Bologna process have a positive effect on the civil engineering education in your country? YES (ONLY POSITIVE) NO (ONLY NEGATIVE) POSITIVE AND NEGATIVE	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
2.	If the answer to the previous question is YES, which are the reasons that caused the positive effect? <i>(Please, tick. Multiple choices are possible)</i> <ul style="list-style-type: none"> the introduction of the system in cycles progress toward the harmonization between civil engineering programmes across Europe a better response to the needs of the labour market the increased emphasis put on the quality assurance the promotion of the mobility of students other <i>(please, specify)</i> 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.	If the answer to the question 1 is NO, which are the reasons that caused the negative effect? <i>(Please, tick. Multiple choices are possible)</i> <ul style="list-style-type: none"> the introduction of the system in cycles poor relevance for the labour market of the first degree other <i>(please, specify)</i> 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

¹ CZ, ČSSI - Czech Institution of Structural and Civil Engineers, Doc. Ing. František Kuda, CSc. – vice president ČSSI

² IE, Engineers Ireland, Damien Owens, Registrar

³ GE, Georgian Society of Civil Engineers, Iuri Svanidze (President), Malkhaz Nikoladze

⁴ HU, Hungarian Chamber of Engineers, P. Scharle Professor Emeritus Széchenyi István University Hungary

⁵ RO, UAICR, Prof. Iacint Manoliu

⁶ SI, Slovenian Chamber of Engineers (IZS), Section of Civil Engineers, dr. Branko Zadnik

4.	<p>If the answer to the previous question 1 is POSITIVE AND NEGATIVE, which are the reasons of your evaluation? <i>(Please, tick. Multiple choices are possible)</i></p> <ul style="list-style-type: none"> • the introduction of the system in cycles • progress toward the harmonization between civil engineering programmes across Europe • a better response to the needs of the labour market • the increased emphasis put on the quality assurance • the promotion of the mobility of students • poor relevance for the labour market of the first degree • other <p><i>(please, specify)</i></p>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
5.	<p>How can be appreciated the level of the graduates of civil engineering programmes in your country in the last 5 years as compared to the one 20-25 years ago?</p> <ul style="list-style-type: none"> • lower • higher • comparable 	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6.	<p>If the answer to the previous question is lower, which are, in your opinion, the reasons for this evaluation? <i>(Please, tick. Multiple choices are possible)</i></p> <ul style="list-style-type: none"> • the decrease in the level of the graduates of secondary education • the quality of the teaching staff • the lack of the interest of the students • other <p><i>(please, specify)</i></p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
7.	Please, add any comment related to the survey						

Concluding remarks

By the time at which this preliminary report was written (26 April 2013) relatively few ECCE members participated to the survey for the Phase I. One has, however, to consider that the deadline for the answers to the questionnaire B “*Survey among the academics*” was 30 April 2013.

We hope that in the almost 5 weeks until the meeting in Lisbon, the number of answers to both questionnaires will increase.

At the meeting in Lisbon, members of the SC E&T will finalize the questionnaire for the survey to be conducted amongst professionals.

On the same occasion, actions to be undertaken will be planned in order to collect after the Lisbon meeting a significant number of answers not only from professionals (Phase II) but also from academics (Survey B of the Phase I).