Second PROGRESS REPORT

12 MONTH DELIVERABLE

December 2012

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CHAPTER I – WORK PACKAGE 1

1. Work Programme

1.1 Expectations and objectives

The objectives of WP1 as a whole are in line with one of the main issues addressed by the call for tenders:

> "*Development of an EU directory on quality/conformity marks (labels, certificates, technical assessment, etc.) for construction products, processes, works, technical equipment and professional qualifications".*

The five first planned tasks of WP1 mirror the detailed objectives of the call for tender :

- An inventory of quality/conformity marks in all EU-27 countries used in construction markets for products, processes, works, technical equipment and professional qualifications together with an appraisal of the level of impartiality of the procedures that are used to deliver the quality marks;
- A critical analysis of the rationale and of the relevance of the information provided by the quality marks to the operators of the construction value chain and to investors, including the compatibility and complementary issues with the CE marking;
- An appraisal of the conditions and of modalities to be followed by construction operators in order to access the quality/conformity marks, including those related to the mutual recognition of the marks by Member States;
- An assessment of the possible impact of the quality/conformity marks on the competitiveness of construction businesses and the functioning of the Internal Market;
- Evidence and assessment of the extent to which the quality/conformity marks are used in practice by the insurance sector, including in the context of cross-border services. The assessment will consider possible constraints on the Internal Market resulting from common practice in insurance.

The two other tasks concern the necessary IT development to make the directory available online.

1.2 Milestones and deliverables

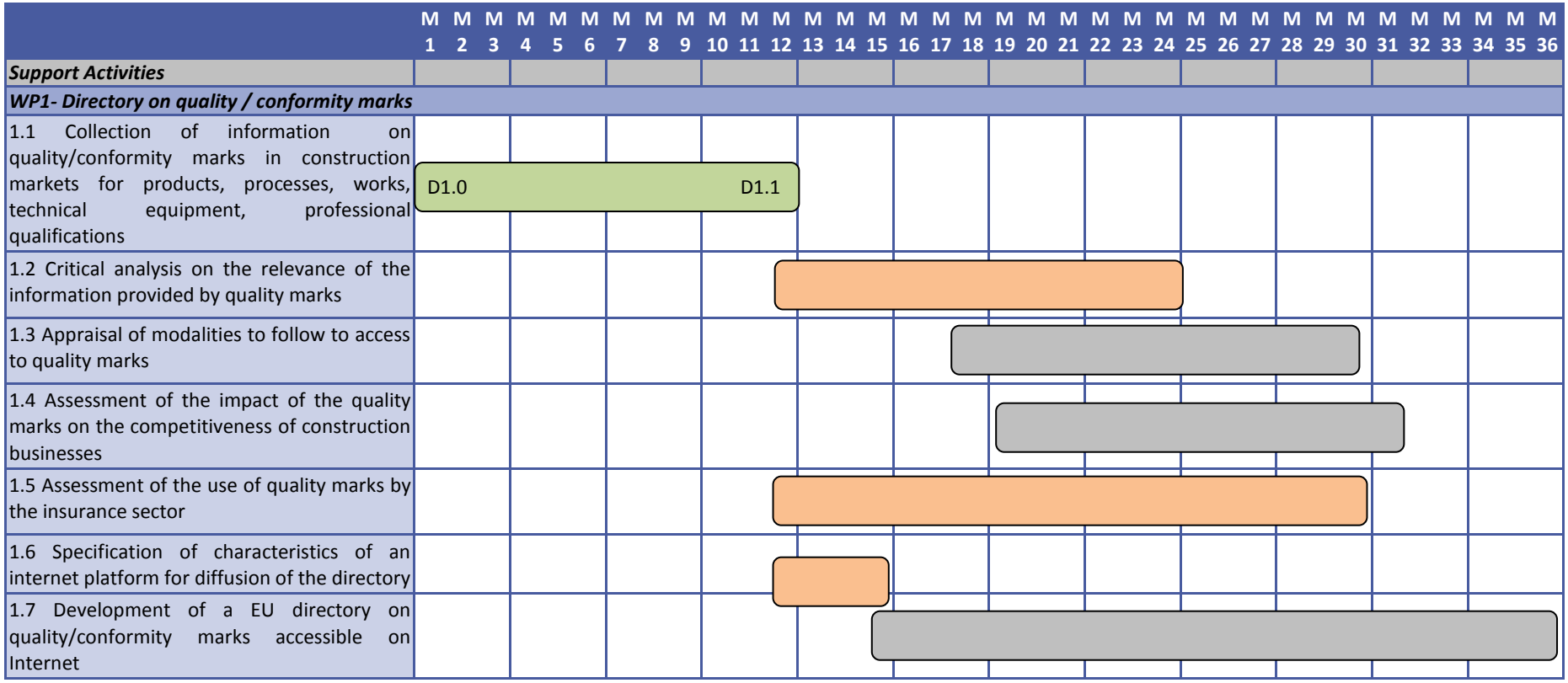
The initial starting point and duration of each task were adapted to take into account observations and feedback from the Commission and forum members.

The main drivers for this evolution are both the design of the directory structure and the anticipation of the IT implementation. As a consequence, task 1.1 was slightly extended and the starting points of tasks 1.6 and 1.7 were pushed back.

Tasks 1.2 and 1.5 have started communicating with WP3. Task 1.6 that will provide specifications for the online directory have also begun.

On the next page, an updated version of the time schedule is provided.

The deliverables marked in the green have successfully been delivered. The orange colour indicates the tasks that began during the reference period.



Colour coding	
Green	Finished
Orange	In progress
Grey	Future tasks

2. Work carried out so far

2.1 Quality signs delivery structure

We have managed to overcome the difficulties encountered over the first six months. A common structure for both a certification procedure and a technical approval procedure has been designed.

This result was obtained by a strong revision of the previously proposed classification of quality signs and a constant attention to stick to already widespread definitions, in particular through CPR-related documents.

This common structure of course allows the description of the CE marking elaboration process. This will allow to adequately addressing the question of the compatibility and complementary issues of quality signs with the CE marking for a given product.

A great number of information is attached to quality signs. The distinction between quality signs that look similar can only be explained and understood by describing in detail what is “behind” this information.

The design of this structure then results from a balance between the temptation for completeness and the necessity to be precise enough to be able to answer the questions raised by the Commission in the call for tenders.

The robustness of this structure has been tested against several examples of both certifications and technical approvals signs.

These examples do not pretend to cover all situations but they nevertheless correspond to current situations of signs produced by different bodies and used by different construction stakeholders. The use of these signs by insurers will be further addressed in close relation with WP3.

Deliverable 1.1 (December 2012) contains the following main chapters:

- ✓ What are quality signs?
- ✓ Why are quality signs needed?
- ✓ How are quality signs generated?
- ✓ Structure of the directory
- ✓ Data collection

This report is the base for the development of the IT tool to collect and store information on quality signs.

2.2 Related topics

Deliverable D1.1 also addresses the sources of information on quality signs.

The main sources will be found from the information of delivery D1.0[1] (January 2012) “review of literature/information sources on quality/conformity marks and building pathology”.

[1] This report was referenced D1.1 when disseminated but its number is D1.0.

The glossary of terms was also revised. The initial version is now replaced by an annex of D1.1 containing terms used in this particular report. This glossary is likely to be supplemented during the course of the project, e.g. by other work packages.

3. Next steps

In the next six month period WP1 will mainly focus on the specifications, the development and the availability of a web-based questionnaire aiming to collect information on quality signs according to the proposed directory structure.

The collected data will contribute to develop ideas for tasks 1.2 and 1.5.

Task 1.3 will begin in light of the available information.

CHAPTER II – WORK PACKAGE 2

1. Work Programme

1.1 Expectations and objectives

As a reminder, the overall objective of WP2 is to develop an EU-wide knowledge base on quality indicators and building pathology, which could support (re)insurers in their risk appraisal of new innovative technologies, especially eco-technologies.

1.2 Deliverables and milestones

The main WP2 deliverables and milestones are shown in figure 1.1 below.

The work performed during the period July – December 2012 falls within the following tasks:

- ✓ Task 2.1: State of the art on quality in construction and building pathology, and
- ✓ Task 2.2: Needs and criteria to develop an EU database on quality and pathology indicators.

Please consult the table to see the progress of the activities within each task in more detail:

Activities	*Progress as for December 2012*
Task 2.1: State of the art on quality in construction and building pathology	
T.2.1.a Definition of construction quality and building pathology	Finished, see Progress Report 1
2.1.b Review of existing research work and data sources	Finished, see Progress Report 1
2.1.c1 Selection of 10 eco-technologies	Finished, see Progress Report 1
2.1.c2 Case studies on the 10 eco-technologies	Finished, see section …
2.1.d Assessment of the value of existing research work, data sources	In progress, see section …
Task 2.2: Needs and criteria to develop an EU database on quality and pathology indicators	
2.2.a Analysis of the needs and criteria of insurers	In progress, see section …
2.2.b Program of requirements for the pilot database	In progress, see section …

As for task 2.2.a (analysis of the needs and criteria), we had envisaged in the Proposal for WP2 that panel discussions would be organised with representatives of the (re)insurance and construction sector at the end of 2012, to discuss their needs and criteria for the EU-wide database on pathology.

As the discussions with the insurance sector are also important for WP1 and WP3, and since the activity to establish the needs and criteria of the insurance sector is one the deliverables of WP3, scheduled for the Progress Report of December 2013, the Elios 2 project team has decided that it was too early to organize these consultations in 2012.

The cooperation of the insurance sector was needed. For this, representatives of the Elios 2 project team participated in a meeting of Insurance Europe the 19th of September 2012, to present the project to the federations and ask for their collaboration.

As an alternative for the panel discussions, and in order not to disturb the progress of WP2, introductory meetings were organized with Hannover Re and Allianz in Paris in September and October, to discuss the information needs and criteria from the perspective of these two (re)insurers.

This gave us the basic requirements for the database on pathology to be developed during the next phase of the project. But it also means that task T.2.2 is not yet completed, and will continue during 2013 within WP3.

It means that WP2 is largely on track with the work programme.

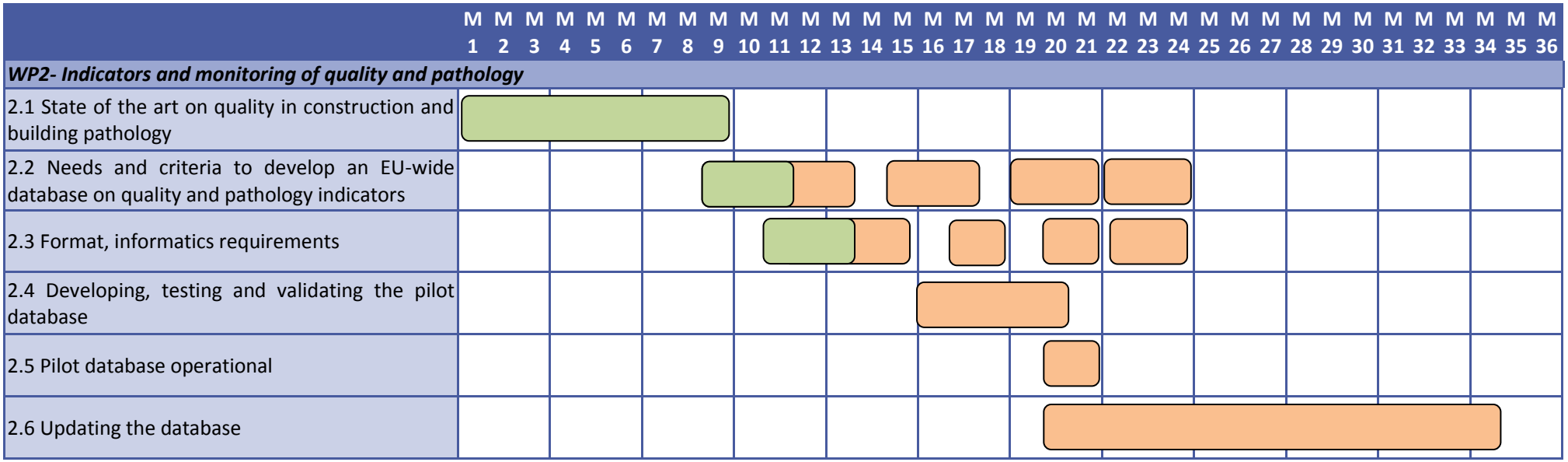


Figure 2.1: Work programme

Colour coding		
	Green	Finished
	Orange	In progress
	Grey	Future tasks

2. Work carried out so far

2.1 Activities

The work carried out from July to mid-December 2012 includes:

- ✓ Setting out questionnaires by the WP2-partners and making draft case studies for the 10 selected eco-technologies by NHBC, June-August.
- ✓ Team meeting with the WP2 project partners, on 30 August in Amsterdam, discussing the results of the draft case studies.
- ✓ Meeting with Insurance Europe, 19 September, in Brussels, on cooperation between Elios 2 and the European insurance sector.
- ✓ Collecting additional material from interviews and questionnaires, August-October.
- ✓ Finishing the 10 case studies by NHBC, October 2012.
- ✓ Analysis of the results of the questionnaires and interviews on the availability of data on pathology of ecotechnologies in EU-27, and an assessment of the value of the results, November.
- ✓ Preparing a survey 'Existing services and databases for pathology information managed by AQC', by CSTB, October 2012.
- ✓ 1st Meeting in Paris with Hannover Re and Allianz, 25 September 2012, on the information needs of insurers with respect to data/information on pathology of innovative products.
- ✓ 2nd Meeting in Paris with Hannover Re, 23 October 2012, on the structure of the database for pathology of ecotechnologies.
- ✓ Preparing a first 'program of requirements' for the database, by Hannover Re, November 2012.

2.2 Questionnaire and case studies on 10 eco-technologies

2.2.1 Response

The questionnaire, already described in the first Progress Report, was distributed by NHBC and the other WP2-partners across the EU.

An invitation to complete the (online) version of the questionnaire was sent to 445 organisations within a broad range of businesses/sectors, in 13 EU countries. The WP2-partners sent a personalised introductory e-mail where possible, followed by a survey link, and a reminder where appropriate.

Sometimes no questionnaire was filled in, but a telephone interview was held, and/or information exchanged by email.

At the closing date of 1st October 2012, 70 filled in questionnaires were received, with additional information from 17 interviews/email exchanges (See table 2.1) This means a response rate of 20%.

TABLE 2.1 – Invitations to complete questionnaire and response

	Number of organisations approached	Response with filled in q'naire	Response by phonecall/ email	No response
UK	327	48	0	279
Netherlands	6	3	3	0
Denmark	12	9	2	1
Sweden	8	3	2	3
Finland	3	1	2	0
Poland	5	0	1	4
Czech Rep.	1	1	0	0
Hungary	2	0	2	0
Belgium	36	3	0	33
France	35	1	0	34
Spain	4	0	0	4
Portugal	3	1	2	0
Italy	3	0	3	0
Total	445	70	17	358

This table shows the distribution over the sectors (government organisations, architects, etc).

Not all the respondents completed the survey in full. On the other hand, some respondents filled in the questionnaire for more than one eco-technology. This is also shown in table 2.2. In total 204 responses for the 10 eco-technologies were received.

TABLE 2.2: Distribution over the businesses/sectors, and number of responses per eco-technology.

Sector	Number of q'naires sent	Number of q'naires returned	Number of responses per eco-technology										
			PV's	Ground source heat pumps	Double-Skin Curtain Walls/ Façades	Mech. Ventila. With heat recovery	Vacuum Insulated Panels (VIPs)	Bio-Material Insu-lation	Paper-Based Insulation	Rain-water Harves-ting	Green and Brown Roofs	Low-VOC Materials	TOTAL
Government organisations	30	2	1	0	2	1	0	1	2	1	2	2	12
Architects	16	3	1	1	0	1	1	0	0	0	0	0	4
Housing organisations	16	8	7	4	0	5	0	0	2	4	0	1	23
Quantity surveyors	2	0	0	0	0	0	0	0	0	0	0	0	0
Manufacturers	74	3	2	1	1	2	3	0	1	1	1	2	14
Retailers/merchants	5	1	0	1	0	1	1	0	0	1	0	0	4
Construction companies	25	6	2	0	1	2	1	0	1	3	1	1	12
Installers	30	3	2	1	0	1	1	0	0	0	1	0	6
Building inspection services	15	2	4	0	2	1	0	2	1	1	3	2	16
Certification bodies	10	4	3	1	3	0	0	5	3	1	4	2	22
Accreditation organisations	4	0											0
Insurance companies	98	10	4	2	2	2	0	3	2	3	4	1	23
Trade associations	34	5	2	0	0	0	0	0	0	0	0	0	2
Professional institutes/universities	28	9	1	0	1	0	0	2	1	0	0	2	7
Consultancies	6	2	0	0	0	0	0	0	0	0	0	0	0
Other	20	3	4	2	0	2	2	3	3	1	3	2	22
Business in more than one sector/unknown	32	9	7	1	3	4	2	4	4	3	5	4	37
Total	445	70	40	14	15	22	11	20	20	19	24	19	204

2.2.2 Case studies

On the basis of the filled-in questionnaires received, NHBC compiled ten case studies. The case studies are added as separate files to this Progress Report.

Each case study describes:

1. Introduction to the technology
2. Available types of technologies
3. The market
4. Some figures on the diffusion in the European market
5. Application of the technologies
6. Characteristics of the industry
7. Construction/installation process, players in the market, actors involved in the design, the production, the delivery, the technical control, the certification, the installation in the building and the operation/maintenance of the technology
8. Organisational and quality aspects (skills, quality marks, professional qualifications)
9. Regulatory aspects, technical regulation
10. Strengths, weaknesses, opportunities, threats of the technology

2.2.3 Conclusions from the questionnaire survey

The questionnaire has a relative strong UK response, since the questionnaire survey was performed by NHBC, who has an extensive network of contacts with UK-based organisations and companies.

Nevertheless, the 70 returned and filled-in questionnaires enabled us to draw some general conclusions on a European scale, and to assess the available pathology information in the pan-European construction sector on a number of criteria, like:

- ✓ informative value;
- ✓ potential use for making a pilot database/knowledgebase with information on defects/failures/damages of eco-technologies;
- ✓ potential use for risk appraisal or other purposes (like building control)
- ✓ complementary aspects

It can be concluded that a detailed database is supported by a significant number of people in the European construction industry, however certain doubts and provisions are expressed:

- It may be hard to gather information on pathology, since the information is often confidential.
- Besides, only few sources collect data on building defects in a systematic manner, and information on defects of eco-technologies is scarce anyway. With some organisations the data collection is very low-key, and only meant for internal knowledge-sharing, or for developing ‘do’s’ and ‘don’ts’, rules of thumb or a description of specific solutions.
- Even if it is possible to gather a sufficient amount of data initially (at the start of the database), the problem will then be to keep the database up to date.

In order for the information provided by the database to be useful, several respondents mentioned that the rules, building practices, roles of the authorities, education of people in the construction sector, climatic conditions etc., differ from one country to another.

Manufacturers produce construction products in/for each member state taking into account those diverse conditions, so that for example a typical ground source heat pump installation can be different from country to country.

It means that it will be difficult to transfer knowledge on pathology from one country to another, or even to make the information on pathology comparable.

In order to overcome this problem it would be necessary for each technology to describe the specific constructive and climatic issues (for example: how to seal a canvas roof? what are the national standards for green roofs?).

One respondent (a national research centre on construction materials and products) comments that, if the EU-database can also be used by research institutes, the transnational joint pathologies can be quickly investigated. They referred to the following example (not an eco-technology):

> *"Since 2009 we have noticed a huge increase in loosening of top layers on concrete floors. Initially, the insurance covered such pathologies, but this did not last. More and more contractors started losing a lot of money because of the claims. It has taken our Institute quite some time to become aware of the situation in surrounding countries like Germany and France. In France, a similar pattern developed, both in terms of pathology and the intervention of the insurers. Through an international database, it might have been possible to contact AQC and others faster to initiate a pilot study and there would have been room for a qualitative and quantitative comparison (e.g. comparison of used concrete specifications, ...)."*

Some respondents also noted that the reasons behind failures of technologies should accurately be reported to enable evidence based decisions to be made.

An overall conclusion is that with appropriate care and due diligence a database could be constructed thereby enabling the EU construction industry to identify (qualitatively, and possible also quantitatively) the potential risk of damage/defects due to or affecting eco-technologies.

The survey found that respondents perceive a significant value in training by eco-technology. This is a fact where we might lay a link with the European Build Up Skills initiative (http://www.buildupskills.eu/).

The survey has identified details of who holds databases and the type of information collected. But this is only the start. Further work is now required to describe the detail of these databases in detail and perhaps call on this information to help design the Elios 2 database.

During the coming months the WP2-partners will also try to improve the response rate by follow-up reminders or phone calls (especially in Germany, Belgium and France).

Although this will probably not change the general conclusions drawn above, a more representative and balanced EU-picture on certain aspects is needed, like the availability of pathology data, and the view of insurers and building control bureaus, especially in France and Belgium.

2.3 Needs and criteria to develop an EU database on quality and pathology indicators.

In this section we present the results of the two meetings with Hannover Re and Allianz on the information needs of (re)insurers for the pathology database.

2.3.1 The underwriting process for new/innovative products

The general procedure for an underwriting process of new innovative products (like eco-technologies) is sketched in the scheme on page 15 (see figure 2.2.)

Suppose a contractor wants to construct a building that will include innovative products like photovoltaic panels, and he wants insurance covers for a number of risks (for example construction all risk, decennial risk, fire/storm damage etc.).

Then the contractor asks a broker to make him a proposal for an insurance contract.

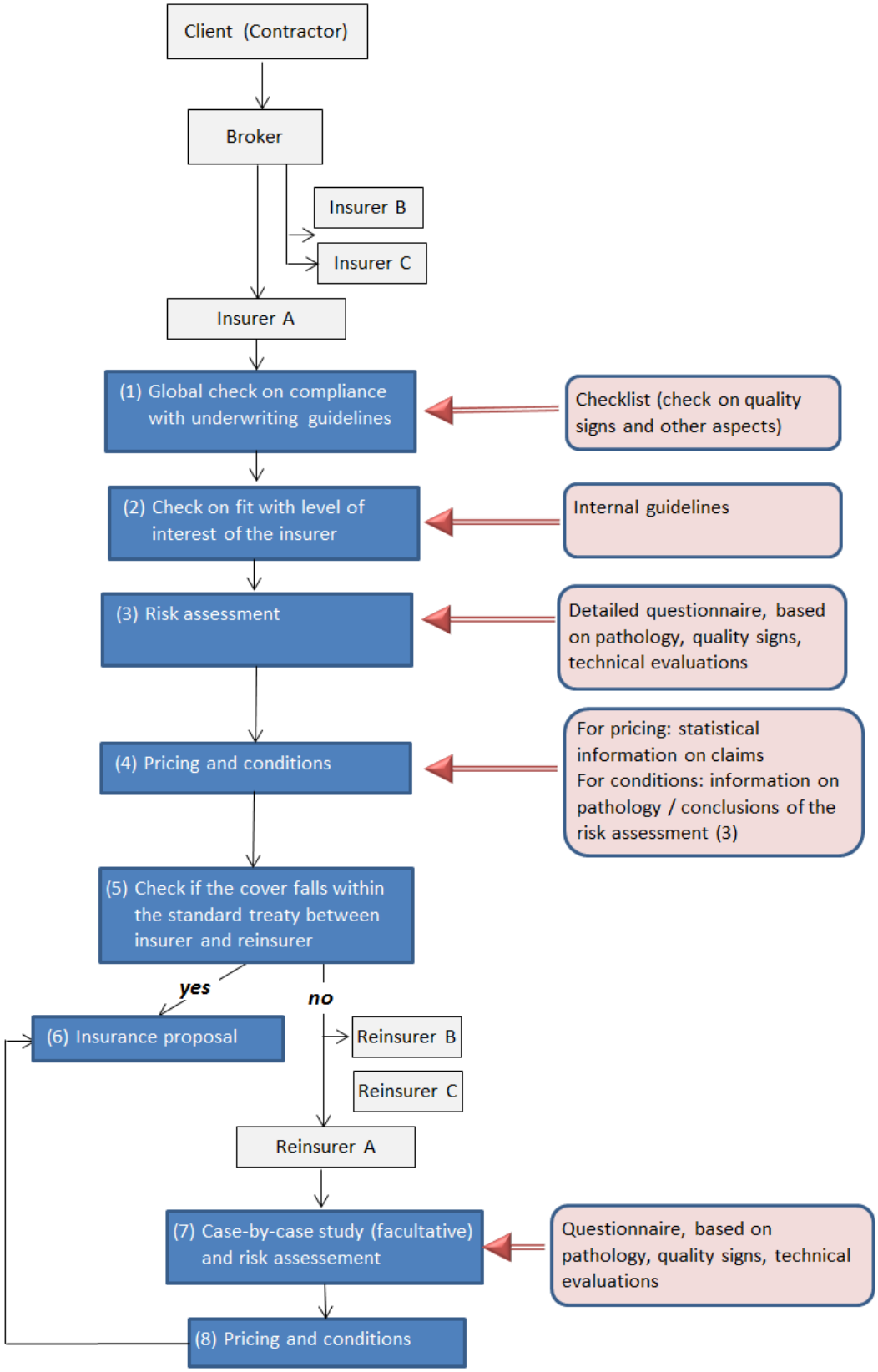
The broker will collect information on the worksite, the construction contracts, plans and project specifications reports, technical documentation, and any document regarded as necessary.

Then the broker will ask one or more insurers (insurer A, B, C) to work out an insurance proposal.

In the underwriting process of the insurer, usually the following phases can be distinguished:

1. Global check if the insurance request for a certain cover complies with the underwriting guidelines of the insurance company
2. Check if the insurance request fits with the level of interest of the insurance company
3. Detailed risk assessment by the insurer
4. Pricing and formulating the conditions f or the insurance cover by the insurance company
5. Checking by the insurer if the cover falls within its standard treaty with his reinsurer
6. If that is the case, the insurer makes the insurance proposal for the client
7. If not, an individual risk assessment and case-by-case approach by the reinsurer follows
8. Pricing and formulating the conditions by the reinsurer

FIGURE 2.2: The underwriting process.



The *first phase* (global check) is the most critical, because if the product (or the company who wants to apply the product in the building) doesn't pass this check, his request for insurance cover is rejected.

Insurance companies usually use a standard checklist for this global check. For example, if the contractor wants to install photovoltaic panels on the building, the enterprise has to score a certain number of points in order to go to the next round.

For example, the enterprise gets extra points if:

- the contractor has a quality certificate or a professional qualification;
- the PV's are certified by an accredited certification institute;
- the PV's have a quality sign (the scoring depends on the type of sign).

If the enterprise doesn't have one of these certificates or technical assessments he will not be accepted.

Phase 2 involves a check by the insurer if the request fits within the level of interest of the insurance company. For example, if the project or contract is very small, the insurance company might not be interested to provide insurance, in order to prevent relatively high administrative costs.

If the enterprise also passes this acceptance check, the insurer will do a risk assessment (*phase 3*). In some cases the insurer has developed a questionnaire for this, with detailed questions on the construction/installation technique, the pathology of the product, experiences etc. The questionnaire is filled in by the broker in cooperation with his client (the contractor).

The outcome of the risk assessment forms the basis for *step 4*: Pricing and formulating the conditions. For the pricing (tariffs, risk premiums), the insurer mainly uses its own statistical data on claims records. In the conditions, the insurer may include certain conditions under which the contractor has to operate on site, limitations of the cover, risks that are excluded from the cover etc.

Next *(phase 5)*, the reinsurer comes in play. First, the insurer checks if the cover falls within the standard treaty between reinsurer and insurer. Yearly, the list of construction works or operations that fall within the treaties is updated. That could mean that eco-technologies that once fell outside the range of the treaties, can fall within the treaties after several years of experience. Note: more than 90% of the construction work falls within the framework of the treaties.

If the eco-technology falls within the treaty, the insurer is automatically reinsured *(phase 6)*.

If the cover doesn't fall within the standard treaty, the reinsurer will apply risk assessment *(phase 7)*.

This will generally involve a case-by-case approach. There is no standard checklist for this. This leads to Pricing and formulating conditions *(phase* 8).

2.3.2 Role of pathology in the underwriting process

As indicated in the scheme, information on pathology is mainly used qualitatively during the phases 3 and 7 (risk assessment by the insurer and reinsurer), but could also be used in phase 4 (formulating conditions).

For innovative products like eco-technologies, statistical data on claims of defects/loss are in most cases not available, so information on pathology cannot be used quantitatively for Pricing (phases 4 and 8).

For pricing, the (re)insurer uses other methods/sources, or a case-by-case approach.

Besides, the administrative processing of claims in the database of the insurer is usually being performed by legal people of the insurer and not by technical people. The result is that it is often difficult to make an analysis of the causes of defects, and the defective parts.

For technical risk assessment the information from claims is therefore usually not very useful.

2.3.3 Examples of existing databases

An inspiring example of a database on building defects is the REX BBC database, that was developed for Agence Qualité de Construction (AQC).

For a description of this database (and other databases of AQC), see the paper prepared by CSTB 'Existing services and databases for pathology information managed by AQC', as Appendix 2 of this Progress Report.

The REX BBC survey takes the form of a field investigation aimed to capitalise the "no quality" and the "opportunities for quality" met on each selected building operation.

Data is gathered in-situ by experts during visits of low energy buildings and using meetings with actors who take part in their design, construction or use.

Today, approximately 300 buildings cases are recorded in the REX BBC database. The defects and pathology directory is filled by means of forms, and accessible by means of a website (with a login code and password).

The recorded data is as follows :

- Operation characteristics,
- Interview(s) (actor + visit) information,
- Defect(s) information.

The origins and impacts of recorded difficulties, dysfunctions, damages and defects are described.

Corrective solutions and good practices are described too; they represent enhancement tracks for all construction actors.

The REXBBC database offers many functionality levels:

- An input interface to enter the return of experiences of site visits, using a predefined nomenclature;

- A search interface allowing data extraction:

    - By technical lots or elements
    - By origins of defect
    - By impacts

- An administration interface allowing an administrative and technical management of gathering partner accounts and a real time access to statistical description of the operations panel.

REX BBC is an example of a database among others that could well serve the information needs of insurers for *qualitative* risk assessment of innovative products, given the fact that it would never be possible to have a database with *quantitative* information on claims (since for insurers this is confidential information about the cost structure of the company, that they are not willing to share with others).

So the REX BBC database could be an inspiring example for developing the Elios database (for instance the type of data, the data structure and the presentation of results).

But also other databases can be an inspiration for WP2. For example: NHBC. They collect information on defects. At this moment NHBC can give the following information regarding their database:

> *"Inspection and Claims use defect coding systems that are based upon the Chapter and Clause numbers contained within our Standards, thus enabling easy reference to the area of work affected, which could relate to design, materials or workmanship. The codes are input to a comprehensive computer based systems which enable a wide range of detailed interrogation and reporting."*

The other databases of AQC are described in the CSTB document 'Existing services and databases for pathology information managed by AQC'.

And there are of course the databases of the Building Defects Fund, the Benchmark Centre for the Danish Construction Sector, or the Technical ABC-list of Woningborg (Netherlands).

During the coming months, the characteristics of those databases will be compared, in order to search for a combination of functionalities that would best serve the interest of insurers.

2.3.4 Information needs for the database

According to Hannover Re and Allianz, the database should in any case contain information on the type of eco-technology involved, the loss/failure and defective part and the cause of the loss/failure.

Figure 3.3 gives a first draft for the possible structure of the database. This includes the following information:

- Information provider
- Name of the construction work or project
- Location of the work
- Type of construction work
- Starting date and end date of the work
- Date of the loss/failure/damage
- Type of eco-technology
- Loss/failure/damage type
- Defective/damaged part
- Cause of failure
- Description of the loss/failure/damage
- Who was responsible for the loss/failure/damage
- Severity of the loss/failure/damage: the cost of repair (can it be repaired easily?).

If possible, the database should also give information on:

- How to avoid the loss/failure/damage (lessons learned)
- Is the installer specialized in that technology (is it his normal and main activity)?
- Level of innovation involved
- New product on the market?
- Geographical use of the product
- Adaptation to the climate
- Is the failure due to local construction practices, national technical rules, or non-compliance with standards?

As this structure is also part of the Deliverable '3.3 Information needs about construction Insurance', of WP3, for which the final report has to be issued in December 2013, this can only be finalised at the end of 2013.

So the WP2 project team has to work with this draft structure in 2013 to set up a prototype for the database which can be made final in 2014.

FIGURE 3.2: 1st draft Proposal for the structure of an EU pathology database

STRUCTURE FOR THE DATABASE OF PATHOLOGY OF ECO-TECHNOLOGIES, with some examples

Informa-tion provider	*Name of construction work project*	Location of construction work		*Type of construction work project*	*Starting date of works*	*End date of works*	*Date of loss*	Type of eco-technology object		*Loss / damage type*	*Defective part*	Cause of failure		*Description of the loss/failure*	*Who was responsible?*	*Severity of the failure/ cost of repair*
		Address	*Country*					*Main category*	*Sub category*			*Global cause*	*Detailed cause*			
Insurer A	The Green office tower	1 Fenchuch - London	UK	Highrise building	1-1-2010	1-1-2012	1-7-2012	Photovoltaic panel	Polycrystalline superimposed photovoltaic panel	Fire	Power-supply	Installation		Total loss of the building after a fire caused by the power supply of the photovoltaic pannels. The power supply wasn't protected as requested by manufacturer.		
				Airport				Photovoltaic panels	"Thick film" superimposed pannels	Fire		Design	Design of defective part			
				Convention / Exhibition center				Photovoltaic panels	"Thin film" incorporated pannels	Collapse		Workmanship	Workmanship / installation of defective part			
				Court / government / parliament buildings				Heat pumps	Air / air	Cracking		Manufacturing	Non compliance of manufactured product properties with required objectives			
				Farm				Heat pumps	Soil / air	Deterioration		Materials	Non compliance of base materials with standards / regulations			
				Holiday resort				Heat pumps	Water / air	Energy performance		External cause	Exceptional loads, outstanding standards' loads			
				Hospital				Double skin curtain wall		Unusability		Improper choice	Adequacy of type of product with objectives / Choice of system			
				Hotel				Mechanical ventilation with heat recovery (MVHR)		Malfunctioning		Use	Improper use of technology			
				Industrial infrastructure / Plant				Vacuum-insulated panels (VIPs)		Watertightness		Maintenance	Defective maintenance			
				Office / commercial building				Bio-materials insulation	Straw, hemp, sheep's wool	Airtightness		Combined cause				
				Gas / Hydro Power plant				Bio-materials insulation	Paper based insulation, e.g. warmcell							
				Religious building				Rainwater harvesting	Catchment basins							
				Residential / apartment building				Rainwater harvesting	Grey water re-cycling							
				School / University				Rainwater harvesting	Green or brown roofs							
				Shopping center				Low VOC materials	paints, kits & glue							

3. Next steps

The following months, the following activities are planned:

- Continuation of the data collection by means of the questionnaire, based on interviews and e-mail correspondence, in order get a more representative and balanced EU-picture on certain aspects, like the availability of pathology data in certain countries (i.e. Germany and France), and the view of insurers and building control bureaus in France and Belgium (see section 2.2.3)
- Working out a strategy regarding the development of a pilot database on building pathology for eco-technologies and its links with a potential agreement between different national actors feeding, exploiting or managing the database.
- Describe the detail of available information on pathology of eco-technologies of existing databases, and perhaps call on this information to help design (and perhaps populate) the Elios 2 database (see section 2.2.3 and 2.3.3).
- Investigating the characteristics and functionalities of existing pathology data bases (section 2.3.3)
- Further exploring the information needs by insurers for the database (see section 2.3.4).
- Defining the provisional format and informatics requirements

CHAPTER III –WORK PACKAGE 3

1. Work Programme

1.1 Expectations and objectives

As a reminder, the overall aim of work package 3 (WP3) is to analyse the conditions for a greater mutual recognition of the construction insurance regimes and to identify the criteria and modalities for the development of insurance schemes that could support cross border services and the cover of building sustainability performances.

1.2 WP3's progress report form

From a general point of view, considering the importance of the duration of the study, beyond a simple schedule of the undergoing process and preliminary observations, the progress report is viewed as an opportunity to present the final report in its intermediary stage including some anticipated conclusions.

Therefore, the different WP3 deliverables can be found in Appendixes in their stage of development at the release date of the progress report.

Considering the close inter-connexion between the deliverables, they will be constantly revised altogether throughout the study, taking into account the feedback from the different sources of information.

This way, the progress report will be another tool to get some feedback from the reactions it will generate.

1.3 Deliverables and milestones

According to the WP3's work plan, the second six month period of the project includes two deliverables:

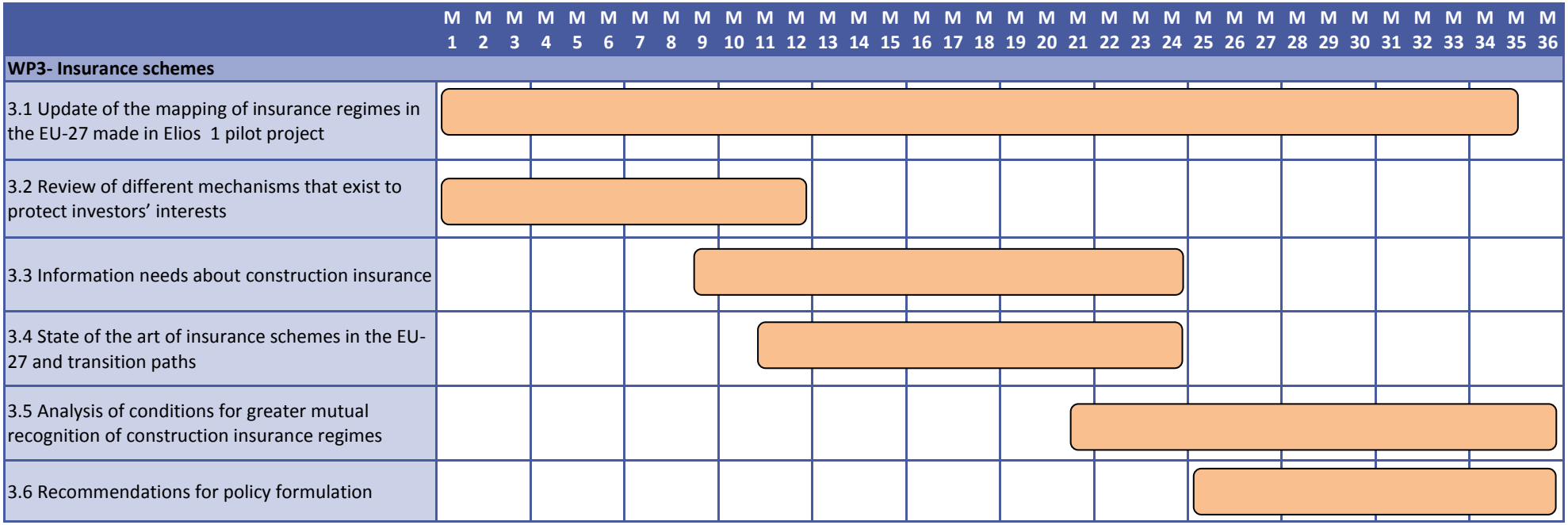
- ✓ D3.1: Update of the mapping of insurance regimes in the EU-27 made in Elios 1 pilot project
- ✓ D3.2: Review of different mechanisms that exist to protect investors' interests

Regarding the goal of the project, it seems much more valuable for the study to issue the final update of the mapping at the end of the project.

For this reason, a first update will be issued at the end of this year, and will be once again updated and extended to market considerations with the help of a questionnaire that will be sent in first half of 2013.

Another modification concerns the displacement of the paragraph entitled "Links with single points of contact" into deliverable D3.1 from its original foreseen location in deliverable D3.2.

Considering the link between the access to insurance information with existing mapping it seemed more appropriate to include it in the first deliverable.



Colour coding		
	Green	Finished
	Orange	In progress
	Grey	A future deliverable

2. Work carried out so far

As WP3's different objectives and subdivision into deliverables are closely inter-related, we decided to present each deliverable development as the work progresses, even for the last deliverable on recommendations, rather than wait for each study to be completely finished.

This is especially true for the first deliverable, the update of the mapping, which should give the state of the art in insurance at the end of the project.

2.1 Introduction

Information is gathered through three different channels:

a) Insurance Europe

A first presentation of the Elios 2 project was made to the federations during a meeting organized by Insurance Europe with some construction insurance representatives, the 19th of September 2012.

A short presentation document will be sent to Insurance Europe in order to communicate on the project with the federations.

b) Allianz

As a subcontractor, Allianz's main task is to update the mapping gathering information from its own internal network of branches on local markets.

The information to collect includes the update of Elios 1 information but also to extend it to more insurance market realities.

In order to do so, we are in the process of drawing up a questionnaire. A first version of the questionnaire (see in Appendix) is currently under validation through Allianz and Hannover Re's internal networks before becoming widespread to all Allianz branches (/before being diffused across all Allianz branches)

c) Hannover Re

As leader of WP3 Hannover Re is in charge of retrieving information from the insurance companies through two channels:

- In order to retrieve information across the EU, we use our internal network of construction reinsurance underwriters. Using this channel, we have updated the existing Elios 1 mapping (presented in the appendix).

- For western countries with important construction insurance markets, meetings will be held directly with major national companies. For the moment the following meetings have been carried out:

• For France: Allianz (general insurer)	Continuous
FFSA (French insurance federation)	June 2012
CAPEB (SMES federation)	August 2012
MMA (general insurer)	May 2012
MAF (architects federation)	July 2012
• For Spain: ASEFA (construction insurance leader)	September 2012
AXA Spain	September 2012
Allianz Spain	September 2012

The objective of these meetings with the insurers is to deal with the insurance mapping made within WP3. However they must also address the questions of quality signs and pathology.

For a more precise scope of those meetings see in appendix an extract from of a typical meeting preparation e-mail.

2.2 Preliminary Observations

The following text is intended to draw up a sketch of the different deliverables that can be found in the appendix.

2.2.1 Update of the mapping of insurance regimes

Based on the information gathered during the Elios 1 pilot project mapping, this study will first update the information about the current different regimes in force in the EU-27.

In the second phase, we will extend this pure update of the legal framework made in Elios 1 to market considerations with the help of a questionnaire (preliminary version presented in appendix).

Topics covered by this deliverable are:

- Selected construction insurance schemes
- Energy performance guarantees
- Mapping of insurance regimes results
- Overview of the different situations
- Construction Insurance Market
- Links with single points of contact

2.2.2 Financial mechanisms for protection of investors' interest

Based on the first results of our exchanges with insurers, this task involves the following processes to be carried out in parallel with the mapping update:

a) Identification of the different existing financial instruments aimed in the protection of construction works, notably other than insurance. This covers a wide range of public and private steering instruments such as insurance schemes, regulation, subsidy schemes, etc.

b) We will outline the specific hurdles existing in the insurance of construction innovation and how the industry has handled innovation in the past by means of a case study. This technology could be "structural sealant glazing" (SSG) now widely used in curtain walls.

Covered topics are:

- Energy performance guarantees
- Concept of conventional vs. real performance
- Measuring the energy performance
- Existing Financial Energy Performance Guarantees
- Specific hurdles to insure innovation
- An example of historical assessment of innovation by insurance

2.2.3 Information needs about construction insurance

This third study will present the construction insurance underwriting process in general, highlighting its specific information needs. Notably, it will try to clarify the risk assessment principles and the role of the Technical Inspection Service in this process.

Developed topics are:

- "Sustainable development" works
- Construction Insurance Underwriting Process
- Risk assessment principles
    - Risk notion
    - Stakeholders
    - Technical Inspection Service role
    - Risk assessment methodology
    - Risk assessment criteria
    - Definition of relevant technical criteria

2.2.4 State of the art insurances schemes and transition paths

Applying a socio-technical approach, this study tries to describe and compare on different levels the different existing national organizational schemes in the construction industry. It should notably overview the different roles of insurance inside the global quality chain in the construction industry.

2.2.5 Conditions for greater mutual recognition of construction insurances regimes

This task will constitute an analysis of the conditions for a greater mutual recognition of construction insurance regimes, and the development of a set of guidelines for a policy formulation.

More specifically, the deliverable should cover:

- Impacts of national strategies on construction insurance
- General financial protection requirements and regulatory framework influence
- Conditions for handling incompatibility of national insurance regimes

2.2.6 Recommendations for policy formulation

This analysis will provide recommendations for policy formulation stimulating good practices and insurance solutions.

Developed recommendations concern:

- Failure forecast
- Quality signs
- Construction techniques and normative framework
- Legal and insurance requirements
- Insurance covers
- Technical Inspection services
- Energy performance guarantees
- Promotion of other guarantees

3. Next steps

The shortcoming foreseen actions for the different members of WP3's team are:

a) Insurance Europe

The federations will be contacted in a second time through a questionnaire. A first version of this questionnaire has been drawn up and is under validation by Allianz and Hannover Re internal network for different local situations.

Hence, once the WP3 questionnaire is available, Insurance Europe will send it to the federations with their own national regime description (made in Elios 1) to check if it still reflects reality and also to retrieve additional information, notably on market volumes or insurance requirements.

Apart from the questionnaire, Insurance Europe should retrieve from the federations the information about existing national "points of single contact". This information is to be presented in the deliverable D3.1.6.

b) Allianz

End of test phase of the update of the mapping questionnaire (see refer to the Appendix) by internal staff of Allianz and Hannover Re, before a widespread distribution of the questionnaire to local insurers through all Allianz branches the very beginning of 2013.

c) Hannover Re

- In order to retrieve information all over EU, the validated questionnaire will be sent to the local insurers in order to extend the description made for each country.

  Beyond simple identification of the contacts made for the call of tender, the difficulty lies in the identification of the right person within the companies with specific knowledge on construction insurance.

- At the moment the following meetings are foreseen:

  - **For France:** SMABTP
    (construction insurance specialist) to be planned
    AXA CS (general insurer for large accounts) to be planned

- **For Germany**: VHV
  (construction insurance leader) planned January 2013
  EIFER (European Institute For Energy Research) to be planned
- **For the United Kingdom:** NHBC (construction insurance leader) planned January 2013
- **For Italy:** Generali
  (construction insurance leader) to be planned
- For Scandinavia (Sweden, Finland, Denmark) by Hannover Re's
  Stockholm office: to be planned

Regarding the update of the mapping, we should meet NHBC at the beginning of next year in order to get extensive information on construction insurance mechanisms on this very specific market.

Regarding the financial protection mechanisms other than insurance, we identified Energy Performance as being the only guarantee that can really benefit from such a system.

As Germany is a country with less post completion guarantees than other Western Europe countries, it is also the biggest user of financial protection. Therefore we should get in contact with the German insurance leader in the beginning of 2013 in order to retrieve information on that matter.

d) APAVE

In the first place, APAVE will deepen their understanding of the way the Technical Inspection Control operates throughout the European countries, in order to plot the similarities and differences between them.

Then, it should be explained how technical control helps to improve the quality of construction. The analysis should also stress the contribution of the Controller of the relevance of the evaluation and risk control processes it takes part in.

More specifically, the following items will be examined:

- The countries where risk assessment by a technical inspection service is mandatory or voluntary and is linked to the insurance schemes;
- The prime requirements of the construction work which come within the technical Inspection scope and are guaranteed by the insurer;
- The types of construction works concerned;
- The missions of the technical Controller;
- Which quality signs are used by the technical Inspection service

e) SBI

To further pinpoint the characteristics of national regimes of construction and insurance and develop the analysis in terms of providing a sound foundation for the policy recommendations the following work will be undertaken in Q1 and Q2 of 2013:

- Overview of construction regimes and business systems and theories on transition paths.

- Three to four qualitative case studies representing archetypical (construction) regimes will be conducted as a part of the horizontal analysis. The analysis will be based on the following countries: France, UK, Denmark and the Czech Republic. Thus the number of case studies of insurance regimes and transition paths will be limited to one example representing each of the distinct construction regimes identified.
- A work plan and proposal for the execution of the vertical analysis. This will highlight the methodological approach as well as data sources applied.
- Drafting of preliminary conclusions form the study for discussion and verification in the project group.

f) NHBC

In order to extend the WP3.2.6's "example of historical assessment of innovation by insurance", which deals with Structural Sealant Glazing (SSG) technology, NHBC will recover information on Great Britain's experience.

The following questions must be addressed:

- How did NHBC "include" this innovative technology into its guarantees? Was any specific "certification" or control regarding the products / the installation system / the constructors or any quality sign specifically created to qualify the risk when it appeared?
- Or was it excluded for a sufficient amount of time in order to get some feedback on the failures?
- What was the extent of the guarantee: only mechanical / structural solidity or was water-tightness included?

CHAPTER IV – WORK PACKAGE 4

1. Work Programme

1.1 Expectations and objectives

The overall aim of WP4 is to provide policy consultation for the European Commission on the goal of the project and to disseminate the results of the project. More specifically, this work package has the following two objectives:

- To assist the Commission services for the setting up and functioning of a forum composed by representatives from the construction and the (re)insurance sector, Member States and Commission services to ensure guidance of the pilot project and a dialogue with stakeholders.

- To disseminate the results of the pilot project to practitioners, representatives of the construction and (re)insurance sectors, the research community and policy makers in the European Union.

1.2 Milestones and deliverables

According to the overall work plan, the second six month period of the project includes Milestone 3 Forum Meeting 2 (month 7) for WP4 along with three deliverables.

The deliverables of the second six month period include (see figure below):

- ✓ D4.3: Forum meeting 2
- ✓ D4.10: Newsletter 2
- ✓ D4.22: Update and revise the Elios 2website.

Please note that the remaining deliverables related to the newsletters have been postponed by around three months in agreement with the European Commission representatives.

The rationale is to have more frequent communication with the Forum members. Instead of having both a Forum meeting and a newsletter every six months, the idea is to communicate every three months alternating between Forum meetings and newsletters.

Below, an updated version of the time schedule is provided. The deliverables marked in green have successfully been delivered.

	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
WP4- Dissemination of data																																				
4.1 Establish forum																																				
4.2 Forum meeting 1 – 7																																				
4.3 Newsletters																																				
4.4 News article																																				
4.5 Press release																																				
4.6 Publish final report																																				
4.7 Update and revise Elios 2 Website																																				

Colour coding		
	Green	Finished
	Orange	In progress
	Grey	A future deliverable

2. Work carried out so far

2.1 Forum meetings (Deliverables D4.3)

A bit ahead of schedule, the Forum has already had its second meeting during the first six months of the project period (deliverable D4.3). The third Forum meeting (deliverable D4.4.) is in preparation and will be held as scheduled on the 24th of January 2013 (month 13).

The work in this six month period has included the draft of minutes from the second Forum meeting and the preparation of invitations and working documents for the third Forum meeting.

The meeting themes for all seven Forum meetings are shown in the table below. The dates of meetings 2, 4 and 6 have been slightly rescheduled from July to June to accommodate for summer vacations in July.

N°	Date	Themes for debate
1	March 2012	Strategy and detailed work plan
2	June 2012	Directory on the directory on quality/conformity marks (draft version)
3	January 2013	Database for indicators on quality and pathology (draft version)
4	June 2013	Analysis of insurance schemes (draft version)
5	January 2014	Cross-cutting debate on directory on marks, indicators and schemes
6	June 2014	Preliminary conclusions
7	November 2014	Final report and recommendations

The second Forum meeting was a full-day meeting held on Wednesday the 13th of June 2012. The forum meeting focused on the directory on quality/conformity marks. The purpose of Forum Meeting 2 was:

- To introduce the project to new Forum members;
- To discuss three selected themes on quality marks of WP1;
- To report on the progress of the other WPs.

The agenda of the second forum meeting was:

- Introduction and welcome – by the European Commission;
- Mandate of the Forum – by the European Commission;
- Progress report on WP1 Quality marks – by Jean-Luc Salagnac, CSTB;
- Discussion of three selected WP1 themes;
  - Progress report on WP2 Building pathology – by Henk Vermande, ARCADIS;
  - Progress report on WP3 Insurance schemes – by Thomas Dunand, Hannover Re;
  - Progress report on WP4 Forum and dissemination – by Kim Haugbølle, SBi/Aalborg University;
- Summary – by the European Commission.

The discussion of selected WP1 themes focused on the following:

- Theme 1) Questionnaire: What type of information is required for the collection of information on quality/conformity marks?

- Theme 2) Analysis: What are the critical issues to be addressed in the analysis of information provided by quality marks (compatibility with CE marking, complementarity, accessibility, 3rd party involvement/certification, acceptance of marks to insurers etc.)?

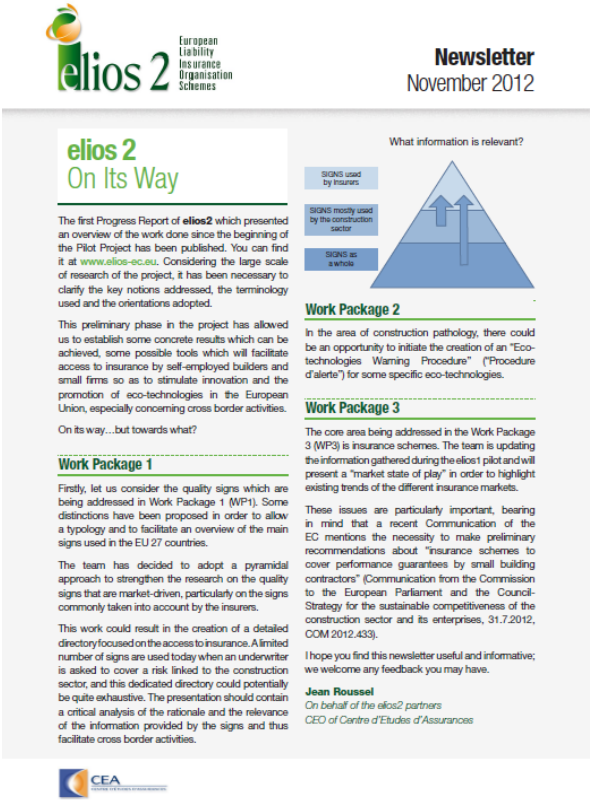
- Theme 3) Requirements for the internet platform: What is required to make the platform useful?

The outcomes and conclusions obtained from the debate on themes have been included in the respective work package.

2.2 Newsletter (Deliverable D4.10)

The third task of WP4 is to prepare seven newsletters – one following each of the forum meetings. The second newsletter (deliverable D4.10) was prepared during the autumn 2012 and issued in November 2012.

A screen dump of the front page of the newsletter is provided below.



elios 2 European Liability Insurance Organisation Schemes

Newsletter
November 2012

elios 2
On Its Way

The first Progress Report of **elios2** which presented an overview of the work done since the beginning of the Pilot Project has been published. You can find it at www.elios-ec.eu. Considering the large scale of research of the project, it has been necessary to clarify the key notions addressed, the terminology used and the orientations adopted.

This preliminary phase in the project has allowed us to establish some concrete results which can be achieved, some possible tools which will facilitate access to insurance by self-employed builders and small firms so as to stimulate innovation and the promotion of eco-technologies in the European Union, especially concerning cross border activities.

On its way...but towards what?

Work Package 1

Firstly, let us consider the quality signs which are being addressed in Work Package 1 (WP1). Some distinctions have been proposed in order to allow a typology and to facilitate an overview of the main signs used in the EU 27 countries.

The team has decided to adopt a pyramidal approach to strengthen the research on the quality signs that are market-driven, particularly on the signs commonly taken into account by the insurers.

This work could result in the creation of a detailed directory focused on the access to insurance. A limited number of signs are used today when an underwriter is asked to cover a risk linked to the construction sector, and this dedicated directory could potentially be quite exhaustive. The presentation should contain a critical analysis of the rationale and the relevance of the information provided by the signs and thus facilitate cross border activities.

What information is relevant?

SIGNS used by insurers

SIGNS mostly used by the construction sector

SIGNS as a whole

Work Package 2

In the area of construction pathology, there could be an opportunity to initiate the creation of an "Eco-technologies Warning Procedure" ("Procedure d'alerte") for some specific eco-technologies.

Work Package 3

The core area being addressed in the Work Package 3 (WP3) is insurance schemes. The team is updating the information gathered during the elios1 pilot and will present a "market state of play" in order to highlight existing trends of the different insurance markets.

These issues are particularly important, bearing in mind that a recent Communication of the EC mentions the necessity to make preliminary recommendations about "insurance schemes to cover performance guarantees by small building contractors" (Communication from the Commission to the European Parliament and the Council-Strategy for the sustainable competitiveness of the construction sector and its enterprises, 31.7.2012, COM 2012.433).

I hope you find this newsletter useful and informative; we welcome any feedback you may have.

Jean Roussel
On behalf of the elios2 partners
CEO of Centre d'Etudes d'Assurances

CEA

The newsletter is designed not only to update interested parties on the progress of the project but also to give them an opportunity to become involved whenever they see fit.

In order to integrate the comments and requested rectifications following the publication of the first newsletter, the second newsletter has undergone several notable changes:

- The number of pages has been reduced to a maximum of four pages.
- The style has been changed towards a more journalistic style.
- The content is more focused on results and outcomes of the work accomplished so far rather than on the goals and work to be done.

2.3 Website (Deliverable D4.22)

Deliverable D4.22 is to update and revise the Elios 2 website. This task has been initiated and a new version of the website was launched in June 2012. During the autumn, updates of relevant news have been added to the website.

3. Next steps

In the next six month period WP4 will focus on the fifth milestone of WP4, namely the execution of the Forum Meeting 4 (month 19) in June 2013. At the fourth Forum Meeting, insurance schemes across EU-27 will be debated with the Forum members.

The deliverables of the third six month period (month 13-18) include:

- D4.4: Forum meeting 3. The Forum meeting will be executed on the 24th of January 2013 and the minutes will count as the first deliverable of the next six month period.
- D4.5: Forum meeting 4. Although the Forum meeting is not due until month 19, the preparation of the meeting will be a central activity in the coming period. A draft of the agenda will be prepared in April 2012 for final approval by the European Commission in early May and for distribution to Forum members in mid-May.
- D4.11: Newsletter 3. The next newsletter will be prepared during March for publication in April.
- D4.22: Update and revise Elios 2 website. The Elios 2 website will be continuously updated during the coming six month period.

CHAPTER V – WORK PACKAGE 5

1. Work Programme

1.1 Expectations and objectives

The objective of WP 5 is to ensure coherence between the activities of the different Work Package teams and the associated bodies in order to achieve a timely delivery of defined tasks within the Work Packages.

1.2 Milestones and deliverables

WP5 has been divided into 5 tasks and 6 deliverables.

- Tasks:

Task 5.1: General administration of the project

Task 5.2: Coordination of work between the participants of Work Packages 1,2,3 and 4

Task 5.3: Animation and coordination of activities of the associated bodies

Task 5.4: Ensure an interactive communication with the Commission within the entire duration of the project

Task 5.5: Consolidating of the input of the Work Package teams 1,2,3 and 4 into research reports

- Deliverables:

According to the overall work plan, the second six month period of the project includes the following deliverables:

D5.1 : Efficient management and administration of the project (month 0-36)

D5.2: Coordination of Work packages to ensure a coherent progress of the research work (month 0-36)

D5.3: Animation and coordination of activities of associated bodies (month 0-36)

D5.4: Assistance to the Commission (month 0-36)

D5.5: Research reports (month 12)

D5.6: Exchanging with the Commission on the subject of reports submitted and ensure necessary amendments if required (months 12-13)

1.3 A remark about the financial protection requirements and the regulatory framework

A new issue to be addressed within the Work Programme.

Considering the great diversity of the national systems in the EU-27 (see Elios 1, special report on liability and insurance regimes), the financial protection of investor's interests is organised following different rules and largely depends on the national legal frameworks.

On the other hand, the Freedom to Provide Services (FPS) guaranteed by the Treaty establishing a Constitution for Europe (article III-144) is one of the main tools available in order to achieve the functioning of the internal Market. It is also, for the insurers, a natural way to offer guarantees to their home clients across Europe.

During our meetings with several stakeholders, it has become apparent that the question of the regulations applicable when an insurer acts in the framework of the Freedom to Provide Services, has to be raised.

The lack of knowledge and valuable information exchanged about the different covers delivered may conduct to some difficulties and impair the financial protection of investor's interests' mechanisms.

This risk could affect all the actors of the market:

- The insurer regarding its own « financial exposure ». This is notably the case for an insurer which is used to work on an unfunded / pay as you go basis and wants to deliver guarantees on a funded / capitalized basis like decennial covers.
- The insured regarding the risk of bankruptcy of his insurer, notably the owner, who must ask for information on his insurer.
- The reinsurer, also regarding its own exposure. This is the case for example if it participates to the cover on a quota-share basis. The asymmetry of information between the parties may also lead to an inadequate use of the treaties (for example use of a general liability treaty instead of specific decennial treaty).
- The financial public authorities who deliver the FPS authorizations. They may not have the knowledge on the financial exposure of foreign guarantees (such as decennial covers). In order to verify and validate the financial security of an insurance activity, the authority must have a thorough knowledge on the insurance product structure.

The access to information is a key element in the global process of insurance underwriting and the Elios team (especially WP 3) intends to examine the risk of difficulties resulting from a failure of information about the national legal frameworks and to search solutions in order to improve the situation.

Below, an updated version of the time schedule is provided. The deliverables marked in green have successfully been delivered.

	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
WP5. Project management																																				
5.1 Management and administration of the project																																				
5.2 Coordination of Work packages																																				
5.3 Animation and coordination of activities of associated bodies																																				
5.4 Assistance to the Commission																																				
5.5 Research reports																																				
5.6 Exchanging with the Commission on the reports submitted																																				

Colour coding		
	Green	Finished
	Orange	In progress
	Grey	A future deliverable

2. Work carried out so far

In the Elios 1 study, the advisory and steering work was limited given the limited number of partners, whereas the Elios 2 study has needed a bigger input in terms of organization to ensure coherence between the different work packages.

To reach this objective and in order to encourage the exchange of information between the numerous partners, different meetings between the work packages have taken place:

- WP1 meetings :

  28-08-2012 meeting CAPEB-HANNOVER-RE-CSTB
  30-08-2012 meeting ARCADIS-NHBC-BBRI-CSTB
  23-10-2012 meeting ARCADIS- HANNOVER-RE-CSTB

- WP2 meetings:

  25-09-2012 meeting ARCADIS-HANNOVER RE-ALLIANZ
  23-10-2012 meeting ARCADIS-HANNOVER RE

- WP3 meetings :

  17-07-2012 meeting HANNOVER RE-MAF-CSTB
  28-08-2012 meeting HANNOVER RE-CAPEB-CSTB
  25-09-2012 meeting HANNOVER RE-ALLIANZ
  23-10-2012 meeting HANNOVER RE-CSTB

It can now be reported that the project is on track. Each WP is to adhere to the deliverables and adjustments are made where needed. For an overview of the work carried out so far by the different WPs, we refer to their contributions above.

Given that the WP5 deliverables span the entire duration of the project, excluding those related to the progress reports for which there is a deliverable every six months, it is not simple to give a status update at any given moment.

In general it can be said that over the past six months, the general administration of the project has been handled and the necessary initiatives taken in such a way that the work programme and the project agenda were respected. The feedback collected from the Commission has been taken into account and WP5 now follows up the coordination between the different WPs.

In addition, the Commission receives regular updates on the progress of the project.

In particular, over the last six months, the Commission has attended work meetings organized by the Project Team (17/09/2012) and by the Steering Group Committee (16/11/2012).

The general public is informed of the progress made through the newsletter distributed December 2012, and the website which is being updated in collaboration with WP4.

Furthermore, a meeting was held with Insurance Europe in Brussels (19/09/2012). The Elios team was represented by the leaders of WP1, 2, 3 and 5.

An overview of the work done so far has been given at this occasion and we came to the agreement that Insurance Europe would help the Elios team to get in contact with the people working for the different federations susceptible to give information for the project. This will of course be followed up by WP5.

The Scientific Committee is also receiving updates on the project as well as all the documents (progress reports, deliverables, etc) thereby enabling them to establish recommendations in terms of the work accomplished and in order to formulate their observations on the future orientation that the Elios 2 project should take.

A first meeting between the WP leaders and the scientific committee is scheduled to take place in May 2013 at CEA's office. The Commission will obviously be invited to take participate at this meeting.

At the moment, preparations are being carried out in collaboration with WP4 and the Commission for the next Forum Meeting held the 24th of January 2013.

Preparatory meeting are programmed to take place the 9th and 23rd of January with the aim of elaborating documents for the stakeholders.

Finally, as pilot of the Elios project, WP5 is studying the possibility of recruiting new partners in order to reinforce the team, most particularly for the Pathology and quality signs database.

3. Next steps

Over the next six-month period, WP5 will continue to monitor the smooth running of the project. In particular, the focus will be on executing Forum Meeting 4 (month 19) in June 2013, organizing a meeting for the Scientific Committee and drafting Progress Report 3.

APPENDIX

Second Progress Report

December 2012

Appendix : Table of contents

The following section is attached to WP3.

1: Deliverable 3.1 Update of the mapping of insurance regimes

Based on the information gathered during the Elios 1 pilot project mapping, this study will first update the information about the current different regimes in force in the EU-27.
In a second time, we will extend this pure update of the legal framework made in Elios 1 to market considerations with the help of a questionnaire (preliminary version presented in appendix).

With the final objective of sharing valuable information between the actors of construction insurance the information presented should give answers to the following questions for the selected countries:
- What are the legal requirements in order to define the local risks of operation?
- What guarantees are mandatory? What is covered?
- How do I get insured (who to contact, what information is required, what quality signs are valued)?

1.1 Selected construction insurance schemes

Considering in first place the object of the study, i.e. eco-technologies, and according to the tender, we chose to ignore in our assessment property insurance guarantees. Those guarantees protect from risks that are not necessarily linked to inherent defects of the construction work, and therefore do not deal with the innovative character of the object of this study. The study will focus essentially on liability insurance, whether general Third Party Liability (TPL), Professional Indemnity (PI) or long term Inherent Defect Insurance (IDI).

Considering the purpose of the study, i.e. access to insurance for SME's, we also chose to ignore guarantees taking place before handover (completion of construction) that are widely common and not closely linked with the technology. Therefore we will not assess the Third Party Liability guarantees during construction. Manufacturers' product guarantees are also ignored for the same reasons.

We will also try to survey the existing tax incentives and more generally the regulatory framework regarding incentives for sustainable constructions, with the difficulty that these incentives can change from one day to the next.

Considering this scope for the study, we will focus our analysis toward the following guarantees, on its post completion part regarding Third Party Liability (see "how insurance works", 2012/04/17, by Insurance Europe[2]):

- Third Party Liability (TPL)
- Professional Indemnity (PI)
- Inherent Defect Insurance (IDI)

[2] http://www.insuranceeurope.eu/publications/publications-web

In order to clarify the content of those guarantees, please find hereafter some general definitions:

- Third Party Liability (TPL)

TPL is a liability that covers bodily injury and/or material damage caused by the insured, whether individuals or corporations (our case), to a third party as a result of action or inaction, or negligence, and which injury and/or damage must be remedied.

- Professional Indemnity (PI)

PI insurance, also called professional liability insurance, is a form of liability insurance that helps protect professional advice and service-providing individuals and companies from bearing the full cost of defending against a negligence claim made by a client, and damages awarded in such a civil lawsuit. The coverage focuses on alleged failure to perform on the part of, financial loss caused by, and **error or omission** in the service or product sold by the policyholder. These are potential causes for legal action that would not be covered by a more general liability insurance policy which addresses more direct forms of harm. Coverage does not include criminal prosecution, nor a wide range of potential liabilities under civil law which may be subject to other forms of insurance.

- Inherent Defect Insurance (IDI)

IDI is a long-term insurance covering damages to the construction which result from an inherent defect discovered after completion and after the owner has taken over the property.
Inherent Defect: any defect in the structural works which is attributable to a defect in design or workmanship or materials.
Structural works: all internal and external load bearing elements essential to the stability and strength of the premises (including subsidence / heave of the soil).

1.2 Energy performance guarantees

Energy performance guarantees is a particular case of insurance since our first findings show that Energy Performance Guarantees are almost inexistent in the European insurance market. This conclusion will of course need to be confirmed with further discussions with insurers.

Nonetheless some financial protection seems to be existing, essentially in Germany. That situation is assessed in the 2nd deliverable, “Financial mechanisms for protection of investors’ interest”.

At the moment, under the growing trend of sustainable development construction, notably through its Grenelle laws, and its very extended inherent defect guarantees (unfit for use), France institutions are in a process of reflexion and definition of how energy performance could be guaranteed.
For now, major insurers offer guarantees on malfunctioning of equipment, or machinery breakdown (MB), with possible business interruption (BI) extensions, but not on real performance guarantees.
Some brokers are proposing some energy performance guarantees, for specific markets such as the installation of efficient boilers within private renovation works, but it did not find commercial success yet, mainly because of a lack of the demand.

In Germany, if a small offer exists, proposed by a few brokers or reinsurers (Munich Re) the number of contracts appears to be small and the targeted client to be essentially big manufacturers.
Nonetheless a real activity of performance guarantees seems to exist outside of insurance. We are expecting to exchange with the EIFER institute to explore the real activity on this market in regard of SME’s operations.

1.3 Mapping of insurance regimes results

As indicated in the “work carried out so far” introduction, at this stage of the study we made a pure update of the information gathered during the Elios 1 study. This update can be found in the Appendix.

Future developments will help us extend this information to market realities.

Note: as Croatia is preparing to join the EU on 01/07/2013 the update of the mapping shall include it.

1.4 Overview of the different situations

In order to focus our analyses and define more precisely the object of the Elios study we will first make a classification of the different legal frameworks situations and insurance situations.
The extent of the mapping toward "the insurance market state of play" should support the choice of the categorization criteria of the different national situations.

Based on the Elios 1 "overview of national liability and insurance systems in 27 EU Member States", we can already draft two important categories of situations: countries where an Inherent Defect Insurance (IDI) long term cover is widespread or even mandatory and other countries, with no post completion covers or very limited covers.

Countries with "widespread" IDI:

Belgium	Denmark	Finland	France	Ireland
Italy	Latvia	Netherlands	Spain	Sweden
United Kingdom				

Other countries:

Austria	Bulgaria	Cyprus	Czech Republic	Estonia	Germany
Greece	Hungary	Lithuania	Luxembourg	Malta	Poland
Portugal	Romania	Slovakia	Slovenia		

It is also interesting to point out that the existence of IDI on a market is disconnected from the national legal schemes.
Thus we encounter a legal compulsory system in the following countries:

Denmark	Finland	France	Italy	Latvia
Netherlands	Spain	Sweden		

While in the following ones the insurance is voluntary:

Ireland	United Kingdom

1.5 Construction Insurance Market

As indicated we should be able to present a "market state of play" in order to highlight existing differences, including:

- Total national volume of construction insurance for Inherent Defect Insurance (IDI). Third Party Liability (TPL) and Professional Indemnity (PI) level of premiums are usually embedded in the General Liability numbers and are not specifically available for construction;
- Scope of the covers, including: description of covered works, definition of "equipments" (what is really covered), existence of limits;
- Example of covers;
- Recourse mechanisms with identification where final responsibilities lie (use of subrogation);
- Use of Freedom to Provide Service;
- Use of Project by project policy vs. open covers;
- Systemic risk (serial);
- What is the covered value: value of a new work, rebuilt value, aged value?

Supported by the "State of the art of insurance schemes in the EU-27 and transition paths" analysis, it should appear that the main criterion to distinguish the situations is the general development of the country, whether it be from a wealth point of view or the size of the insurance markets based on an historic development of quality in construction.

This assumption is notably based on the fact that insurance is expensive and that insurers are mainly interested by what they call mature markets or wide spread products which can generate profits. If more emerging markets might be of interest for an insurer it is by their growing potential, but never at the expense of a limited and controlled risk.

This development criterion is reflected at a European level by a clear distinction between western and eastern countries. Eastern countries seem to rely on simple liability with limited covers while western countries implemented more extended covers like IDI (with the notable exception of Germany which developed a specific set of responsibilities in order to achieve quality in construction).

As already underlined, within western countries, each country seems to have very specific insurance schemes, mostly around IDI covers. Hence a 2nd criterion of classification seems to be the type of IDI coverage those rich countries have historically found through their custom practise of insurance.

Interestingly beyond our acknowledgement of independency between legal framework and existence of IDI, we observe that compulsory insurance does not necessarily means widespread subscription of IDI by the public. Italy is in this regard a good example, while theoretically IDI is compulsory on housing, the market stays very small. On the contrary Spain's market is now nearly inexistent because of the economic situation and not the consumers' behaviour. The IDI Spanish direct premiums were around 400 M€/year a few years ago.
In comparison, with its historic leadership regarding IDI, France maintain a level of direct premium of 2 500 M€.

1.6 Links with single points of contact

As expressed in the Services Directive 2006/123/EC:
"(48) In order to further simplify administrative procedures, it is appropriate to ensure that each provider has a single point through which he can complete all procedures and formalities (hereinafter referred to as 'points of single contact'). […]
Art. 21 […] Where appropriate, advice from the competent authorities shall include a simple step-by-step guide. Information and assistance shall be provided in a clear and unambiguous manner, shall be easily accessible at a distance, including by electronic means, and shall be kept up to date. […]"

In other words, each country should provide accessible information about insurance subscription on its territory through a point of single contact.

Hereafter is the list of those links sorted by country:

Country	Entity	Site
France	FFSA	http://www.ffsa.fr/sites/jcms/c_51299/how-decennial-liability-insurance-works?cc=fp_7202 http://www.ffsa.fr/sites/jcms/p1_663116/decennial-liability-insurancea-guide-designed-for-european-builders

Acting as a link between centralized and national available information, the Elios single point of contact should refer to all those national internet sites.

2. Deliverable 3.2 : Financial mechanisms for protection of investor's interest

Based on the first results of our exchanges with insurers, this task involves the following processes, carried out in parallel with the update of the mapping:

a) Identification of the different existing financial instruments aimed to the protection of construction works, notably other than insurance. This covers a wide range of public and private steering instruments such as insurance schemes, regulation, subsidy schemes, etc.

b) We will outline of the specific hurdles existing in the insurance of construction innovation and how the industry did in the past to handle innovation through a case study. The chosen technology is "structural sealant glazing" (SSG) now widely used in curtain walls.

2.1 Energy Performance Insurance

2.1.1 Energy Savings Insurance (ESI)

For instance, the EC report "Financing Energy Efficiency: Forging the link between financing and project implementation"[3] made in May 2010, indicates:

"Energy Savings Insurance (ESI) is a formal insurance contract between an insurer and either the building owner or third-party provider of energy services. In exchange for a premium, the insurer agrees to pay any shortfall in energy savings below a pre-agreed baseline, less a deductible. Pricing is typically expressed as a percentage of energy savings over the life of the contract, although it is sometimes expressed as a percentage of project cost. The premium is paid once, in the first year of operation. Such policies are non-cancellable, so the owner is guaranteed to have access to the insurance for the originally agreed contract term. Energy saving insurances typically insures annual savings expectations (a "volumetric" approach). Energy-savings insurance can reduce the net cost of energy-saving projects by reducing the interest rates charged by lenders, and by increasing the level of savings through quality control. […]

ESI is widely practiced in Canada and in the US; in Europe the global market of risk transfer is slowly growing up, but insurance products such as ESI are still limited. In the US several insurance companies already offer ESI, which traditionally has been used to guarantee power reductions at retrofitted buildings. State governments have led ESI efforts, with several requiring such insurance from firms that provide energy management services in state-owned facilities."

2.1.2 Equipment Performance Insurance

On the contrary to ESI, it appears that some real performance insurance exists on specific equipment. It is essentially the case for photovoltaic panels, which are the object of a quite extensive offer (ex: Solar Insurance & Finance - Solarif[4], which operates in various European countries).

Even though this insurance offer may appear as a success, it remains focused on a specific system and can hardly be extended to a whole construction. The problem of insuring performance of a building is far more complex and represents a huge challenge as we will see in the following paragraphs.

2.2 Energy Performance Contracts (EPC)

If ESI is an insurance protection, other forms of contractual financial protection exist, commonly referred to as Energy Performance Contracts (EPC).

[3] http://ec.europa.eu/energy/efficiency/doc/financing_energy_efficiency.pdf

[4] http://dev.solarif.com/sites/all/bestanden/fck/brochure%20Performance%20output%20warranty.pdf

"An EPC is a performance-based procurement method and financial mechanism for building renewal whereby utility bill savings that result from the installation of new building systems (reducing energy use) pay for the cost of the building renewal project. A "Guaranteed Energy Savings" Performance Contract includes language that obligates the contractor, a qualified Energy Services Company (ESCo), to pay the difference if at any time the savings fall short of the guarantee."[5]

Indeed EPCs are very attractive since for the customer the cost of the improvements' investment is paid back from the savings, while the risk of the savings falling short is bared by the ESCo.

For more explanations see "A guide to Energy Performance Contracts and Guarantees"[6] from the Sustainable Energy Authority of Ireland.

It is clear that EPC market is essentially aimed to the industrial and corporate buildings, where:

- The construction process is often a Build-Operate-Transfer (BOT) project type, where design, construction methods and building operation (including maintenance) are totally integrated and assessed as a whole (from the very beginning of the project).
- The energy use of the building is organized, with a defined range of "normal activity". Single users' behaviour have nearly no impact on the effective energy consumption, hence performance, of the building.

Therefore this type of protection doesn't totally satisfy one of the underlying goals of the Elios project which is to promote eco-technologies' activity, including when intended for housing.

Even though, as stated out here before, apart from self-financial protection, i.e. auto-insurance, at this stage of the study, Energy Performance Guarantees appear to be the only existing non-insurance general protection in Europe.

On the other hand, the need for an equivalent insurance protection grows rapidly in conjunction with the development of Energy Performance Contracts throughout Europe[7], at the moment, pure insurance offer seems to fail in its attempt to cover completely these new requirements.

We will see in following paragraphs the reasons underlying this situation and where non insurance solutions exist.

[5] http://energyperformancecontracting.org/

[6] http://www.seai.ie/Your_Business/Public_Sector/Energy_Performance_Contacts_and_Guarantees.pdf

[7] http://www.enhr2011.com/sites/default/files/paper-nieboer-ws11.pdf

2.3 Concept of conventional vs. real performance

Conventional performance is the theoretical performance of a construction work, based on the technical characteristics of the construction, under standard conditions of use (set of usage rules and maintenance requirements made by the designer).
It has to be opposed to the real effective performance of the building, expressed by the real energy consumption or production of the building. This performance is achieved according to the behaviour of the user, which depends on its own definition of what is normal, for instance in terms of perceived comfortable temperature or aeration of the rooms.

While the design and construction of the building is based on a conventional performance, the achieved performance is partly based on outstanding variables, behaviour of the user and effective climate conditions for example.

The Conventional Performance requirements are met if certain materials are used and follow a set of implementation rules. Therefore the effective real performance is not a requirement and can hardly be a factual objective in construction works where performance depends on the user's behaviour.

2.4 Measuring the energy performance

The 2010/31/EU[8] directive which aims to increase building energy performance requires from the state members to develop a calculation method in order to assess energy performance regarding the "energy performance of a building"[9].

By definition these theoretical tools rely on a very simplified appraisal of the real energy performance of a building not taking into account some important components of energy consumption (such as appliances). Therefore they give results that can be quite far from real life results, even though they are absolutely consistent with material and mechanical laws.
The existence of various tools increases even more the gap between theoretical design rules used to build and the effective consumption.

The question therefore becomes: what type of energy performance can be insured? Is it possible to insure the gap between expected performance and observed performance?
If achieved, real performance can be simply measured by real energy consumption; it is not a desirable insurance product, since it does not cover inherent performance of the construction work.
On its side, conventional performance still needs a standard framework that could assess material, design and workmanship of the construction work.

Duration of the warranty
Considering the link between the energy performance and the equipment of the construction (notably HVAC) or the maintenance of the envelope of the building, the duration of the warranty has to be adjusted consistently with the lifespan of these elements.

[8] Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings

[9] "energy performance of a building" means the calculated or measured amount of energy needed to meet the energy demand associated with a typical use of the building, which includes, inter alia, energy used for heating, cooling, ventilation, hot water and lighting

2.5 Existing financial energy performance guarantees

We can already infer that existing non insurance protection is mainly aimed to office buildings, where the final use (or behaviour) can be defined independently from personal perception.
Secondly, these protections are the result of implementation by contractors of quality systems inside an integrated group of actors functioning as a whole. The different compounds of the final performance of the construction work, i.e. materials (products), design and workmanship must be assessed by the different responsible actors on common grounds. It has to be an integrated approach. The drawback of this approach is that it is specific to each set of actors, considering their habits and objectives (requirements).
Further meetings, especially with German actors, should clarify those schemes.

2.6 Specific hurdles to insure innovation

Two major parallel hurdles can explain why it is so hard to insure innovation:
- The lack of historical claim:
  Without any claim history the insurer cannot rely on any statistical evaluation of the risk. As expressed otherwise, innovative products can only be assessed through a specific forecast of failure.
- The lack of risk assessment tool:
  Due to its novelty, the insurer has no clear technical view on the risk of failure of an innovative product. Hence, the insurer has no underwriting mean to evaluate the price of the cover.

2.7 An example of historical assessment of innovation by insurance

In order to better understand how eco-technologies could be assessed by the insurance industry, it is interesting to see how it has been done for another innovative technology in the past.
If we consider cladding technologies, the development of Structural Sealant Glazing (SSG) technology was one of the most striking innovations of the 80's.

Looking back to construction insurance in the countries where water tightness was insured, we can outline two important lessons:
- Even for an innovative technology, it took quite a long time for the insurance industry to assess the risks of failure of this technology and find some risk criteria in order to make an appropriate pricing. In fact it appears that the definitive solution was to wait for a sufficient time to get a valuable return of experience on failure. The statistical approach was in fine applied.
- In order to assess the risk and find an insurance solution, the industry had to "create" a specific tool, i.e. find a relevant quality sign. The same occurred more recently in France for photovoltaic panels with the appearance of the pass innovation (emitted by the CSTB), with its green / red indicator.

3. Deliverable 3.3 : Information needs about construction insurance

The following paragraph is only intended to draw a sketch of the future final content of the deliverable.
This third study will present the construction insurance underwriting process in general, highlighting its specific information needs. Notably, it will try to clarify the risk assessment principles and the role of the Technical Inspection Service in this process.

3.1 "Sustainable development" works

In order to describe the process of underwriting and its information needs we first have to define the purpose of this process, i.e. the insured "sustainable development" works, object of the insurance.
A definition of a typology of construction works concerned by sustainable development, hereafter named "eco technologies" is already presented in WP2.

3.2 Construction Insurance Underwriting Process

The general underwriting process can be detailed through the following steps:

1 Global check if the insurance request complies with underwriting guidelines of the insurance company
2 Check if the insurance request fits in the level of interest of the insurance company
3 Detailed risk assessment by the insurer if necessary
4 Check if the risk falls within the treaties between insurer and reinsurer or needs facultative reinsurance (case by case approach)
5 In case of facultative reinsurance technical assessment, terms and conditions of the reinsurer
6 Establishment of terms and conditions by the insurance company

Therefore the insurance companies define their insurance guidelines and interest in regard of their global strategies and experience of the field. As free players in the market, the insurance companies are in their own right to use any technical criteria, independently from regulations.

3.3 Risk assessment principles

Based on the knowledge of the technical inspector, the insurer and the reinsurer in construction risk assessment:

- Description of the main risk analysis principles in construction insurance;
- Identification of the main technical information needs in the construction risk underwriting process for the different Construction Works categories.

3.3.1 Risk notion

a) Common terminology in insurance risk assessment

Risk:	1) Uncertainty arising from the possible occurrence of given events.
	2) The insured or the property to which an insurance policy relates. For example, a building is called a risk.
Uncertainty:	State, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequences, or likelihood.
Exposure:	Extent to which the construction work is subject to loss because of some hazard or contingency.
Level of risk:	Level of risk: Importance of the consequence of an event, otherwise noted: Level of risk = Exposure x Likelihood of occurrence.
MPL:	The Maximum Possible Loss is the worst loss that could possibly occur because of a single event.
Aggravation:	A circumstance which increases the risk of failure.

b) Definition of the notion of catastrophic risk

The frequency risk comes back on a regular basis while the catastrophic risk is the risk of occasional unusually high losses.
Without a long history, innovative technologies clearly belong to the catastrophic risk type.

Since there is not enough pathology feedback to be able to extract a statistical law regarding its failure, risk evaluation of innovation has to be made upon specific technical inherent risk assessment.

The analyst will have to focus on a predictive failure analysis based on his knowledge of the technology, through a qualitative approach.
On specific technologies the insurer can also get assistance from an external specialist.
This definition is supporting the uselessness of a statistical approach in risk assessment of innovation.

c) Concept of “systemic risk”

A systemic risk is a widespread damage caused by a unique default on a product widely used. It is still a catastrophic risk but with a widespread damage.
It is the risk that insurers fear the most, because a small cause has a great impact in terms of damage and amount of loss.

d) Different types of covers

Depending on the type of activity carried out by the contractor, the following different types of insurance covers is usually provided:

Type of cover	Conditions basis	Insurance object / insured activity
Single covers	conditions made on a project by project basis	occasional construction projects
Open covers	conditions agreed initially, declarative basis	heterogeneous projects
Annual covers	conditions made on a turnover basis	numerous / uniform projects

e) Concept of Not Current Technique

A Not Current Technique (NCT) is a technique without any accepted technical sign as relevant to assess the risk by the insurers.
For example in France, an innovative product that is outside national codes or framework, and that has no ATEC or recognized quality sign will be considered a NCT.
Those techniques need a specific insurance assessment to be covered since they are out of the "normal" insured works spectrum.

3.3.2 Stakeholders

Identification of the different stakeholders in the construction process that may be impacted by insurance:

- The project owner / The developers
- The manufacturer
- Designers including:
  - ✓ Architect;
  - ✓ Geologist, geotechnical engineer, hydrogeology and environmental engineering firms;
  - ✓ Engineering firms: structural engineering, ventilation engineering, heating engineering, acoustic engineering, electrical engineering;
- The contractors

3.3.3 Technical Inspection Service role

In order to assess the risks the insurers usually need the assistance of an independent supervisor or so-called Technical Inspection Service (TIS) or Technical Controller.
Our investigations show that insurers use a very narrow range of quality signs in their risk assessment.
If we consider quality signs as means to indicate a level of risk for the insurer, then the TIS assessment itself can be viewed as a quality sign.

a) Context of the Technical Inspection Service intervention

In order to assess the risks, the insurers usually need the assistance of an independent third party or so-called « building technical controller » who assesses the technical risks linked to the construction work to be built, so that the incidence of the damages guaranteed by the builders insurance is reduced.
These private control organizations, originally established on a voluntary basis, extended their activities to the regulatory building control scheme.
In recent years, the general trend is to enlist the services of an independent private technical control, which may be done in a different way according to the countries:

1- Delegation of building control activities from administrative authorities
In a number of countries, design and technical details control as well as on-site inspection during construction phase are partly delegated from administrative authorities to an independent third party for lack of means. These controls are meant to ascertain the compliance of the project with the regulatory requirements, mainly regarding the soundness of the construction work.

2- Technical requirements of the building regulations
The mandatory missions mainly apply to the soundness of the construction works and sometimes to fire safety, which are two requirements among the seven to be fulfilled (see appendix 1, Construction Product Regulation – prime requirements applicable to construction works). In France, other missions are compulsory such as anti-earthquake building practices and accessibility for disabled people.

3- Incentive from the insurer
The insurer may require a technical control when the works exceed a certain amount. This control mainly deals with the soundness of the construction work and is usually ordered by the contractor or the architect .

When it deals with building renovation or construction close to a neighbour, the insurer imposes the same mission for the existing or surroundings works that may be impacted.

4- Voluntary approach

To make sure the prime requirements such as noise pollution, thermal insulation and energy savings (CPR – appendix 1) are taken into account, the project owner may voluntarily order a mission to the technical Inspection .

b) How can technical control contribute to construction quality?

Construction quality depends on a few factors either before the construction to avoid defects, or after the completion of the work in order to make the best repair of these defects.
Technical control is a sequence of three actions: PREVENTION, CONTROL, INSPECTION, meant to assess risks and avoid defects during both the design and construction stages. Technical control makes sure that regulatory requirements are respected and does a technical assessment of the buildings which design or implementation may lead to a risk of damages or accident prejudicial to the quality of the construction.
In the context of eco-technologies where new materials or energy and resources-efficient methods appear on the European market, independent third parties technical assessment is the way forward to manage and control the risks linked to innovation.
What does indeed make the difference between the new Product (process or technique) and the well-known traditional Product? The answer is the lack of technical rules or experience feedback.

The technical Controller knows how to adapt to those new situations through his specific expertise:

KNOWLEDGE: knowledge in construction technologies, regulations and standards, role of the various stakeholders in construction and building pathology.

KNOW-HOW: implement investigative and control techniques (notion of proof, assessment), risks analysis (identify, rank), write an advice, explain it and argue about it, inform, capitalize.

KNOW-TO-BE: ability to integrate the context and to adapt with precision and efficiency.

Economically, the prevention of risks allows the best conditions for the market development and thereby reduces construction costs.

c) Risk assessment and management process in the technical Controller's mission

The technical inspection service adopts, within the same mission, an approach of risk assessment together with another approach of inspection according to specific methods based on technical standards, which may vary depending on the country (construction regulatory framework, technical regulations, etc…). With respect to the project progress these approaches will result in:

- risk assessment during the design phase,
- supervision of the companies self-monitoring during the construction phase,
- regulatory inspection during the completion stage ahead to receipt of the work.

Based on available information, the technical Controller evaluates deviations toward technical standards (building regulations, state of the art, etc.), analyses the risks of occurrence of feared events (according to operation, pathology, conditions of quality control by companies) and submit its expert opinion on the construction work.

On the basis of this opinion, the insurer identifies hazardous construction works and is able to decide the quotation of its insurance plan.

Some quality signs are necessary information, in particular to assess the CE marking or labels which declaration of performance helps to ensure the suitability of the product to the construction work.
However, confidence in quality signs level may vary according to products or construction works.

d) Role of the Technical Inspection service in claim risk management.

The quality of construction may also be attained if possible defects are properly repaired within a reasonable period of time and at lower cost for the Customer. Quality is often measured by the number of claimed accidental damages.

Regular technical inspections on site are often organized after completion of works by the operator or the project owner at periodicities which may be defined by the insurance company providing the coverage.

In United Kingdom, the NHBC system integrates within its organization technical inspectors and involves several functions:

- Prevention : prior work with the builders to prevent the constructional problems,
- On-site inspection during the building process,
- Insurance: decennial liability insurance for housing construction,
- Standardization: writing of technical standards, periodically revised and reflecting feedback on surveyed substandard work when on-site inspecting.

3.3.4 Risk assessment methodology

As previously stated, for innovative technologies, the risk assessment is made through a qualitative approach.
Based on his experience, the analyst must qualify the risk according to various criteria, focusing on known pathology, and on failure cost and probability of occurrence.
The result of an assessment is to define a level of insurability, or "aggravating factor" of the risk. A risk can be considered as "uninsurable".

3.3.5 Risk assessment criteria

Regarding single covers, the risk assessment made by the (re)insurer will globally deal with the different topics described hereafter:

a) Construction scheme
- Type of construction. Some risks are specific to technologies used in certain type of constructions. For example HVAC systems are critical for hospitals, where nosocomial disease is a risk.
- Nature of the work (new works / rehabilitation / turnkey project). The adaptation to an existing context is source of interface risks.
- Intended use of the construction (to be sold / operated by the developer). The implication of the owner as a great impact on the care taken on the design phase, thus on the operating risks.
- Adequacy of planned maintenance
- Owner / developer experience and know how on this type of project
- Expected use of the construction by the owner (quality level requirements / opportunity of claiming the guarantees)
- Level of complexity / innovation. By definition the insurer hates prototypes, for which he lacks vision
- Surroundings. For the Third Party Liability assessment.
  - Cost of construction. Cost breakdown is an important tool to appraise the level of standard / quality expected.
- Involvement of a Technical Inspection Service

b) Natural event context (to be analysed even if not covered)
- External loads taken into account:
  - Weather exposure (wind / snow / rain)
  - Water intake (groundwater uprising / flood)
  - Earthquake
- Design in regard of natural events :
  - Level of design loads in regard of specific national standards (national annex to Eurocodes)
  - Necessity of further studies (ex: modelling) made by external engineering firm (cross check)
  - Type of stress assessed in the design in the light of the risks to cover (thermal gradient, fatigue)

c) Materials
- Conformity of materials with standards (to be checked during construction)
- Quality of work depending on the origin of materials (problems of quality regularity depending on producer)
- Welding control (on-site vs. workshop welding / control of welding by trusted institute)

d) Design
- Intrinsic risks associated with the type of work (structural complexity, choice of technology / materials)
- Known pathology for this type of work, based on insurer's experience or expertise of the technology
- Level of loads in regard of national standards
- Adaptation to the context
- Interaction with other construction elements (ex: effect of humidity on wood framework caused by high level of airtightness imposed in new constructions)
- Scale of design studies
- Use of non-traditional techniques
- Qualification / specialization of designers
- Quality of the reports

e) Technical Inspection Service
- Qualification / trust in the TIS
- Quality / specific knowledge of the person in charge of the control with this specific type of work
- Extent of the mission (mission / number of visits / nature of the reports)
- Adequacy of fees (evaluation of time allocated to the project)

f) Execution / methodology
- Type of contract. Structure of contractual relations between contractors has an impact on recourses possibilities hence extent of the cover.
- Qualifications / experience of contractors on this specific type of work
- Construction / installation methods
- Quality plan / self-check

g) Surroundings / neighbouring
- Risks of impact of a defect on construction works with different owner (general liability risk). Ex: distance of neighbours (risk of fire spread)
- Exposure / amounts at stakes

h) Existing works
- Standards to be applied
- Level of connection with existing parts / compatibility risk
- Adequacy of new work in regard of the existing one / analysis from a global point of view
- Importance of the modifications on existing bearing structure
- Specific risks of covered existing parts

i) Construction work inherent risk
   - Geometry:
     - Geometry of building (height, asymmetric geometry, non-alignment of bearing elements, "transparency" in lower levels)
     - Geometry of bearing parts (spans of simple or cantilever beams and floors, slenderness of columns / walls)
     - Depth of excavations
   - Materials used for construction (innovation)
   - Structure
     - Materials
     - Bearing elements
     - Bracing
   - Roof / Façade
     - Glass roof
     - Point fixed structural glazing

j) Other specific technical risks criteria

As we've seen risk assessment is mainly dependant on the person making the analysis, is knowledge and experience on the type of construction, without any very specific criteria. However regarding inherent risks, insurers developed some specific technical risk criteria for some widespread eco-technologies such as Photovoltaic panels or Heating pumps.

3.3.6 Definition of relevant technical criteria

In relation to WP1, identification of relevant technical criteria, i.e. signs, used to assess "eco technology" risks in construction insurance.

As previously stated, risk assessment is essentially qualitative, based on the analyst own experience, whether the risk is a project or the activity of a contractor. It appraises the adaptation of the "product" to the construction work and its environment in general.

The insurer does not have the technical means to assess directly the risk of an innovative product at large. Therefore he also has to rely on quality signs.

The sign will define the required technical specifications of the product itself, in what environment it can be used (its purpose), and how to install it. Its aim and use are completely distinct from the insurer's risk assessment.

For the insurer, more than an appraisal tool, signs are usually a simple prerequisite to the insurability of a risk. As for standards and norms compliance, quality marks are seen as a requirement, a prior condition to be insured. They are mandatory; it is the absence of default of marking that prevents insurability. They are usually not a positive assessment tool of valuation but a negative, essential "must have" label to access insurance.

Nonetheless a few signs seem to be discriminatory and give some information on the risk level. In order to retrieve this information, we decided to use a top down approach in accordance with WP1, and already got a few answers.

Examples of national quality signs used by insurers in their risk assessment of eco-technologies:

Country	Name of the sign	Certifying body
France	Avis Technique (ATEC)	CSTB
Germany	TUVdotCOM	TÜV Rheinland
Italy	Certificato di conformità (of TIS)	ACCREDIA (ex SINCERT)
Spain	Documentos de Idoneidad Técnica (DIT)	Instituto Eduardo Torroja
United Kingdom	MCS Certificate	Microgeneration Certification Scheme

Those quality signs are presented more extensively in the WP1.
Nonetheless first findings show that quality signs used by insurers for their risk assessment are very scarce. Therefore it will be difficult to assess various technical criteria (used in the risk assessment) in regard of each corresponding type of “eco technology”. The study will essentially focus on the identification of the widest different used criteria across Europe rather than on hypothetic technical reasons for their use.

4. Deliverable 3.4 : State of the art insurances schemes and transition paths

An overall objective of the project is to achieve concerted change on construction insurance regimes and sustainable innovation in Europe. A transition towards increased levels of sustainable innovation in construction is, however, not only a question of aligning national interests, but also a question of aligning highly discrete and durable systems of construction, sustainability and insurance within the individual member states.

Applying a socio-technical approach, combining contributions from transition theory and institutional theory, the analysis will be conducted as two distinct yet interrelated analyses; a horizontal respectively vertical analysis of regimes development and transformation as illustrated in figure 1 below.

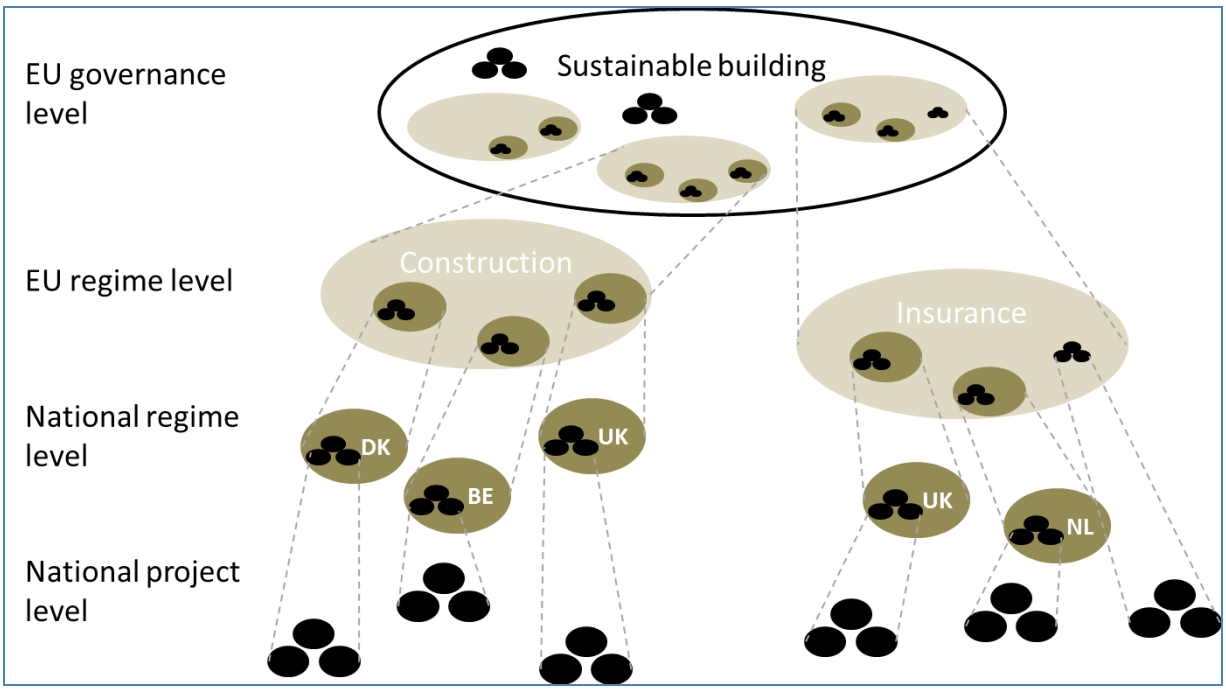


Figure 1: Levels of analysis (adapted after Seyfang and Longhurst, 2012).

The vertical analysis aims at providing an understanding of the interplay and co-development of national regimes of insurance, sustainability and construction within the individual national context. The analysis will result in a typology of various national construction regimes based on their technological, historical, social, political, cultural and economic characteristics. The analysis will be conducted in order to identify main similarities and differences between the various national construction regimes that may function as drivers or barriers towards a common European insurance policy implementation, which is the focus of the horizontal analysis. The horizontal analysis, thus, will focus on the interplay between national and supra-national regulation and on the dynamics of adaption and circulation of insurance schemes in Europe.

Preliminary findings

The preliminary findings indicate that national regimes of construction vary markedly from country to country in the EU. Winch (2000, 90) has distinguished between three types of systems / regimes:

- The Anglo-Saxon system is characterised by *"a greater reliance upon liberal market values, relatively low levels of state regulations…."*
- The corporatist system depends more on "*…negotiated coordination between the 'social partners', greater willingness to intervene in the market to protect social values…* "
- *"The 'étatique' system has more extensive coordination of the economy by the state relatively high level of worker protection … and a desire to promote national champions in various industrial sectors"*

To this, a fourth regime typology may be relevant for the Eastern European countries, where the development of new state/market relations has been under development since the early1990s.

Not only do these national regimes of construction and insurance differ on some dimensions, they might also be contradictory and even detrimental in terms of their functioning. In addition, the preliminary findings also indicate that the distinctiveness or idiosyncrasies of the different national construction regimes have impact on the actual uptake of new technologies and policies. In essence, this entails that policy and technology implementation follow different transition pathways dependent on the regime level characteristics.

Therefore, the governance of policy implementation, e.g. new in relation to EU legislation on the topic of sustainable building, is constituted as a prime unit of analysis in the further project progress. The reason for this being that it under such varying and even contradictory circumstances is not possible to implement and enforce a single solution or governance scheme across all nations. Instead, new policy (insurance) schemes have to be designed and applied differently in different nations acknowledging that a single, uniform solution might not be possible to implement.

References

Seyfang, G. and Longhurst, N. (2012) Grassroots innovations and complementary currencies – testing niche theories in the social economy, *IST 2012 – International Conference on Sustainability Transitions, Track D: Niche Regime Interactions,* August 29-31, 2012, Technical University of Denmark, Denmark, pp.2-28.

Winch G. M. (2000), « Construction business systems in the European Union », *Building Research and Information,* vol. 18, 88-97.

5: Deliverable 3.5 : Conditions for greater mutual recognition of construction insurances regimes

The following paragraph is only intended to draw a sketch of the future final content of the deliverable.

This task will constitute an analysis of the conditions for a greater mutual recognition of construction insurance regimes, and the development of a set of guidelines for a policy formulation.

Mutual recognition may concern a wide range of stakeholders: it may be the construction companies / designers, the (re)insurers / brokers or the national authorities / financial control regulator.

Depending on the type of stakeholder the answer to the questions “what is intended by recognition?” and “what are the expectations or fears that are implied or understood behind the idea of recognition?” may be regarded very differently. Consequently the investigation actions must be adapted to the stakeholder.

On the one hand our “mapping update” questionnaire, intended for insurers, raises questions about the cross-border activities. But in order to widen our understanding we may have to create a small questionnaire intended to contractors that could be distributed by the FIEC and EBC representatives.

This questionnaire should notably ask: if they are interested by sharing information on their national insurance regime? Why? What information they would like to get from a hypothetic exchange system? In what form should this information be shared?

Obviously, considering the usual low return rate of questionnaires, it will not be sufficient to get an overview of the totality of the 27 countries. That is why this analysis will have to extrapolate the received answers to all encountered EU situations.

5.1 Impacts of national strategies on construction insurance

Analysis of the impacts of national strategies toward “sustainable goals” on construction insurance and the interactions with the financial protection mechanisms.

This case study will only be done on the limited range of existing situations where insurance is impacted by those “sustainability” strategies.

For example, we will see if public policies toward sustainable development had any impact on construction guarantees, especially if new energetic performance covers appeared.

5.2 General financial protection requirements and regulatory framework influence

Formulation of general financial protection requirements and regulatory framework influence in order to support the sustainable development: this section is to be developed.

5.2.1 Financial protection requirements

We previously noted that the necessity of information on financial protection touches all the actors of the market:

- The insured regarding the risk of default of his insurer, notably the owner, who must ask for information on his insurer.
- The insurer regarding its own « financial exposure ». This is notably the case for an insurer which is used to work on an unfunded / pay as you go basis and wants to deliver guarantees on a funded / capitalized basis like decennial covers.
- The reinsurer, also regarding its own exposure. This is the case for example if it participates to the cover on a quota-share basis. The asymmetry of information between the parties may also lead to an inadequate use of the treaties (for example use of a general liability treaty instead of specific decennial treaty).
- The financial public authorities which deliver the FPS authorizations, which may not have the knowledge on the financial exposure of foreign guarantees (such as decennial covers). In order to verify and validate the financial security of an insurance activity, the authority must have a thorough knowledge on the insurance product structure.

Once again it appears that access to information is a key element in the global financial protection requirements hence in insurance underwriting.

5.2.2 Regulatory framework influence

Regarding insurers activity, one of the main tool available in order to offer guarantees to their home clients across Europe is the "Freedom to Provide Services" (FPS) European law is one of the main.
It is important to note that some validations must not suffer its use. The lack of valuable information exchange and knowledge about the covers delivered may impair the national financial protection mechanisms that underlie the FPS.

Regarding financial regulations, the main existing European framework is the Solvency 2 directive.

5.3 Conditions for handling incompatibility of national insurance regimes

Those conditions will be in great part addressed in the policy formulation.

5.3.1 What causes policy convergence

To be further developed

5.3.2 When does policy convergence occur

To be further developed

5.3.3 European Insurance Contract Law

As explained in a 31 january 2013 European Commission press release[10], an expert group on a European Insurance Contract Law (EICL) has been set in order to "*examine barriers to cross-border trade in insurance products caused by different contract laws in EU's Member States*".

Rather than Construction insurance, the expert group "*is likely to focus on insurance products of a greater economic significance, such as:*

- *Motor and travel insurance, which consumers and businesses are most likely to buy or use on a cross-border basis;*
- *Life insurance which could serve as private pensions for citizens.*"

Nonetheless, this analysis is part of a wider programme set up to create a Common Frame of Reference (CFR) for European general contract law that may have a direct impact on the construction insurance industry.

As a reminder, the object of the Contract Law is to allow voluntary parties, to opt out of national law regimes and agree that the insurance contract will be governed by the EICL.

Consequently, we will update later on our point of view on possible convergence paths according to the outcomes of the analysis of the Expert Group, expected by the end of 2013.

[10] http://europa.eu/rapid/press-release_IP-13-74_en.htm

6. Deliverable 3.6 : Recommendations for policy formulation

The following paragraph is only intended to draw a sketch of the future final content of the deliverable.
This analysis will provide recommendations for policy formulation stimulating good practices and insurance solutions.

As already indicated in Elios 1, considering states' legal sovereignty, legal and insurance frameworks throughout Europe can only be changed by the stakeholders being part of the national markets themselves. Those frameworks are the result of local culture regarding construction methods, legal history, insurance role in the construction quality chain, and financial realities. The update of the mapping and further analyses should shed some light on the origins of those differences.

In consequence our main lever to promote insurance will be to give incentives to the insurers in order to stimulate the market.

In order to support the propositions of incentives, an important tool would be the creation of an European internet site that would be a central single point of contact for the different exchanges regarding construction insurance of eco-technologies. We'll see in the following paragraphs how this tool can support different goals.

6.1 Improve failure forecast

One of the most efficient incentives would be to give some help to the insurers in their risk assessment.
Being able to make a reliable forecast of failure is the key element in order to do the pricing of a cover and propose guarantees. And as previously indicated, without claim history and statistical data this forecast can only be done through a specific qualitative analysis of the risk.

Preliminary results of discussions indicate that:

- The technical classification of claims is a problem: it has to be done by experienced staff that can classify the claims, and it is unlikely that most insurers have the computational systems to differentiate "eco-technological" claims.
- Insurers are not interested in participating to a pure statistical database, which would report the spread of claims, since it touches their internal pricing secrets. They seem to be more interested by an exchange on technical information on systems' failures.
- One form of exchange could be the creation of a "Pathology Forum" where insurers:
  - Decide together the systems to be assessed, corresponding to shared topical subjects
  - Create together a simple typology of claims regarding eco-technologies that each insurer could implement in its own computational system. That way, the staff could technically categorize and manage the claims in order to select and report them.
  - Send information on technical claims on those systems, without giving any information on the number of claims or number of contracts underwritten in order to get rid of any strategic statistical data disclosure. The only information given is that the topic is of interest for the insurer.
  - Get the information processing and risk analysis done on those claims by the "Pathology Forum" itself, relieving every insurer to do it on its side. Pooling the outsourcing of the analysis would constitute a substantial economy for the insurers.

6.2 Hazard Notification Procedure

With the involvement of insurers, another form of exchange of information could be the creation of a "hazard notification procedure" for eco-technologies.

6.3 Quality signs

One way of helping the insurers who want to cover a foreign company is to give them the means to appraise the quality of this company through a better knowledge and understanding of its quality signs. The given information must be sufficiently relevant and discriminatory in terms of risk assessment to have an added value for the insurer.

Reminder: the technical information that will be provided by the information system has to be sufficiently valuable for the insurer in order to help them assess the risks and consequently set up new insurance products to seize new market opportunities.

On the other hand the companies should know what signs are used locally by the insurers to appraise the risks on their homeland, notably it they want to set up business or engage in a long term activity. Those signs are the ones overviewed in the "Risk assessment criteria" (Chapter III, 3.1.2) and in the "Definition of relevant technical criteria" section (Chapter III, section 3.3.2.7) in conjunction with WP1.

6.4 Construction techniques and normative framework knowledge

In order to help a company operating in a foreign country we could give information about the local construction techniques and normative framework.

Companies should get a better knowledge of:

- Local design codes and general normative framework, including local climatic or live loads.
- Local construction techniques for different type of construction elements. For example type of roofs and terrace sealants for a company installing photovoltaic panels.

This information should help the companies demonstrate that they comply with local design codes, and are taking into consideration the local environmental construction context and therefore should help them find insurance.

6.5 Legal and insurance requirements knowledge

The single point of contact should present the regimes individually for each country, and therefore the insurance requirements and/or legal risks to work in that country.

Interestingly we've met the French insurance federation (FFSA) that has already produced a Guide for European Builders in an attempt to help foreign companies understand the French legal framework and how to comply with it.

This guide is a good example of what could be the single point of contact. This guide notably gives:

- Description of how insurance works locally.
- Description of the administrative documents needed to be insured

Therefore, the single point of contact should present:

- The Legal framework on one hand and the insurance obligations, if any, on the other. Considering the presumed incompetence of the users in legal terminology (SME), beyond a pure description of the regimes, the implied risks for the "builder" should be clearly pointed out. The reader should be able to know easily what are the risks incurred in a selected country, notably financial, and consequently what insurance protection is needed.
- The means to get insurance in that country. Should notably be indicated: who to contact, what information is needed, etc. In other words give an insurance subscription guide in order to improve the access to insurance.

6.6 Existing insurance covers

Another way of clarifying the subscribing process could be to improve the transparency of the existing insurance products and existing financial offer.
Considering the difficulty of sharing insurance companies' contracts, the information could be given through examples of usual covers included in those contracts.

Beyond covers, the single point of contact should also give information about the usual insurers' information requirements regarding innovative risk. These requirements could be:

- Experience feedback on comparable projects
- Specific opinion of a TIS or expert

6.7 Technical Inspection Services (TIS)

Share information on existing national TIS "certification" procedures:

- The companies should be able to know the role of the TIS in the selected country, notably in regard of insurance requirements.
- The insurers should be informed on the local legal or private accreditations of the TIS in order to help them follow their insured companies on foreign markets.

Promote systematic inspections of construction works and on contractors like what is done by NHBC in order to diminish insurance costs.
These inspections should notably be carried out in absence of mandatory Technical Control.

6.8 Energy performance guarantees

As we've seen, coverage of performance guarantees faces many challenges.
First, even if it is not pure performance coverage, existing covers can quite easily be extended to malfunctioning.
On its side, "Consumption performance" coverage, i.e. the level of energy consumed by the user or produced in order to suit the consumer demand, faces huge hurdles. Its dependency on the consumers' behaviour makes it hard to assess, particularly if the users are individuals (opposed to companies for which consuming framework is better known).

"Inherent performance" coverage, i.e. theoretical performance of the construction work in place, hence consisting of material / design / workmanship coverage must find ways of assessing the measuring problems. One way of promoting these guarantees could be by defining standardized measures of "inherent performance".

6.9 Promotion of other guarantees

6.9.1 Completion Guarantees

Promote the "completion guarantees" (perfect fulfilment), in order to get the remediation measures directly handled by the contractor without involvement of the insurer. The completion guarantee is a one-year or two-year guarantee under which the builder agrees to carry out the required work and assume related risks during the years following completion.

Find other direct repair schemes without involvement of insurance and extra cost arising from the "recourse" process.

6.9.2 Proper Functioning Guarantees

Promote the “proper functioning” covers, of a two years duration, which guarantee that equipment are operational and in good working order. These guarantees perfectly fit eco-technologies coverage requirements and can be carried out independently from inherent defect long term guarantees (IDI).

6.9.3 Professional Indemnity Guarantees

Promote the Professional Indemnity (PI) guarantees, across all Europe. Beyond general Third Party Liability (TPL) this second level of protection of the consumer can be quite easily taken out. As it touches the design process it suits well innovation coverage difficulties and therefore “eco-technologies”.

6.9.4 Enforce responsibilities

Find ways for manufacturers and contractors to be more responsible of their work. This could be done through minimum obligations of protection on the General Liability and ensuring that those guarantees can be easily activated by the insured.

7. Object of meetings with Insurers

The scope of those meetings is more precisely about (extract from typical meeting preparation e-mail):

i) Insurance
- Recent evolution of the Legal framework of construction insurance in your country in regard of the description made in Elios 1 (Elios 1 regime presentation sent to the insurer);
- Links between the different guarantees: different guarantees and actors concerned (extent of liability) / practice of subrogation on liability / existence of limits on some guarantees / importance of annual basis insurance vs. single project insurance;
- Extent of covers: toward equipments (definition of equipment), what are the works covered values (replacement value / depreciated value);
- Role of insurance brokers on your national market;
- Is the cross-border insurance a problem for you? Whether it be for your clients wanting to work abroad or for foreign companies willing to work in your country (do you have a lot of demands)? Activities of your company abroad?
- Do you see any competition from foreign insurers coming under the "Freedom to Provide Service" European law?
- Evolution of the Insurance Market in your country, regarding CAR/EAR (Construction/Erection All Risks) and Decennial Guarantees (Volumes, level of subscription in regards of the obligation)?
- How do you take into account the eco-technologies in your covers (existence of specific contracts)?
- Are the energetic performance guaranties a topical issue at the moment in your country? Do you have specific covers?

ii) Risk assessment
- How do you assess the construction risks in general and innovative construction systems more specifically (who makes the assessment and of does this assessment consist)?
- What is the importance of the Technical controller / inspection service in the insurer's underwriting process? In general is design / engineering made upstream or during construction?
- What quality signs existing on the construction market for eco-technologies are considered relevant and taken into account in the risk assessment (by the insurer and also by the Technical Controller)?
- Would access to information on Quality Signs existing abroad be of any interest?

iii) Pathology
- Is there any "agency" collecting data on construction claims in your country?
- Do you have any specific focus / concern on pathology regarding eco-technologies? Which ones?
- Do you have the computing means to identify and characterize the claims on eco-technologies?
- To what form of "Pathology Forum", that could collect data on eco-technologies pathology, could/would you be willing to participate and exchange information, and what type of information? Would you get involved in an “Eco-technologies Warning Procedure”?

8. Questionnaire

Elios 2 - Mapping of Insurance Regimes Questionnaire

ELIOS 2 PROJECT

Elios 2 is a study initiated by the European Community which aims to "*Facilitate access to insurance by self-employed builders and small building firms so as to stimulate innovation and the promotion of eco-technologies in the European Union*"[1].

In order to do so, the Elios team notably seeks to set up an internet site to inform companies on the construction insurance requirements across the 27 constituent members of the EC.
For further details on Elios, please visit: www.elios-ec.eu/

OBJECT OF THE QUESTIONNAIRE

Therefore, on behalf of the European Commission, we would appreciate it if you could complete this survey in order to provide information on Construction Insurance Regimes for innovative building technologies to companies willing to work throughout Europe.

By completing this survey, you will help the industry to understand insurance information needs and procedures to obtain coverage in your country. This information could also help you to provide a better service, whether when receiving a request from a foreign company or when accompanying your insured companies throughout the European Community.

While answering the questionnaire, please keep in mind that the study is essentially aimed at:
- Eco-technologies' insurance. Eco-technologies are defined as technologies which contribute to the environmental performance of buildings and/or whose use is less environmentally harmful than relevant alternatives. You can find some examples of eco-technologies in the appendix.
- Small and Medium Enterprises (SME) like specialized contractors, architects or engineering firms.

Feel free to add comments, or give a more detailed description of your regime if you consider it could be useful. Free space is provided at the end of the questionnaire.

Filling in the questionnaire should take around half an hour.
The information collected through this survey will not be made available to any third parties except in anonymous summary report form.

Please send it back by e-mail or post to: **elios2@hannover-re.com**
Hannover Re – Elios 2
52 avenue des Champs-Elysées
75008 Paris, France

Many thanks for your assistance in completing this questionnaire.

[1] Final report to be published by the European Commission by the beginning of 2015

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Identification

Country
Name of your Company
Activity
Your Name
Address
Phone
E-mail

1 - LEGAL REGIMES

National legal and insurance regimes were presented within the Elios 1 study.
Have there been any legal or jurisdictional modification to the attached extract from the Elios 1 study?

☐ Yes. Modifications to be made to the text :

Have any new guarantees been observed (e.g.: regarding energy performance) ?

- In general ☐ Yes. New guarantees:

- For eco-technologies specifically ☐ Yes. New guarantees:

2 - INSURANCE POLICIES

Significance of the fields / definitions used in the following paragraphs

Type of cover:	Is the cover provided on a Voluntary or a Mandatory basis?

Extent:	- Is there a minimum cover amount enforced by law (e.g.: value of the construction)?
	- Is there a loss limit?
	- What is the usual value of the amount covered?
	- Examples of cover extensions usually included in the guarantees:
	  - 3F (faulty material/workmanship/design)
	  - LEG 3 (defective part)

Single covers:	Conditions made on a project by project basis
Open covers:	Conditions agreed initially, declarative basis
Annual covers:	Conditions made on a turnover basis

elios 2 European Liability Insurance Organisation Schemes

2.1 - BEFORE CONSTRUCTION HANDOVER (completion of works)

Name of the cover(s) and its principal extensions in your domestic market			
Are the following types of coverage of eco-technologies, for Small and Medium Enterprises, available on the construction insurance market in your country?		Type of cover	Extent
Cover of damages caused by the contractor to third parties	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
Cover of damages to the work only carried out by the contractor itself	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
- limited to mechanical resistance and stability		☐ Yes ☐ No, cover extended to :	
Damages to the whole building	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
- limited to mechanical resistance and stability		☐ Yes ☐ No, cover extended to :	
Financial loss directly related to the material damage	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
Financial loss not directly related to the material damage	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered

Free comments:

Lack of energy performance : Energy savings and heat retention	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
Noncompliance with standards? (e.g. seismic, acoustic, fire safety, accessibility to disabled)	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
- Even in absence of material damage		☐ Yes ☐ No	
Financial loss directly related to the material damage	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
Financial loss not directly related to the material damage	☐ No	☐ Yes ☐ Voluntary ☐ Mandatory	Amount covered
From a legal point of view, are deductibles allowed for these guarantees?	☐ No	☐ Yes	Amount covered

Type of construction covers offered to foreign companies:

Contractors:	☐ Single covers / ☐ Open covers / ☐ Annual covers
Architect or Engineering firms:	☐ Single covers / ☐ Open covers / ☐ Annual covers
Manufacturer:	☐ Single covers / ☐ Open covers / ☐ Annual covers

Free comments:

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elios 2 European Liability Insurance Organisation Schemes

3 - RISK ASSESSMENT

What information do you usually require to make your risk assessment of a construction project?	single covers	annual covers
Company activities		
- Date of creation / start of activity	☐	☐
- Description of the company's activities	☐	☐
- Size of staff	☐	☐
- CV of key staff members	☐	☐
- References	☐	☐
- Claim history	☐	☐
Financial and legal information		
- Turnover / financial results / growth of the company	☐	☐
- Company's security information / solvency / rating	☐	☐
- Financial relationship between the Insured and the Owner (other than the construction contract)	☐	☐
- Insurance clause in contract conditions	☐	☐
Covered Activities		
- Do you use a reference system or classification to define the different professional activities covered (e.g.: waterproofer, roofer)	☐	☐
- Is it common to the market? Particular comments:	☐	☐
Professional skills		
- Proof of professional qualifications is required (e.g.: diploma):	☐	☐
- Proof of professional experience is required (list of completed projects)	☐	☐
Technical documentation on the project(s)		
- Typical plans and sections drawings	☐	☐
- Detailed technical specifications of the construction work	☐	☐
- Cost Breakdown	☐	☐
- Quality plan / risk management procedures	☐	☐
- Other technical data:		
Third party intervention		
- Technical Inspection Service contract or proposal for services	☐	☐
- Technical Inspection Service reports	☐	☐
- External opinion / review of the risk by a specialist on a specific topic	☐	☐
Quality signs		
- Quality signs used for the risk assessment (e.g.: European Technical Approval - ETA):	☐	☐

What other information could be useful for you?

4 - SUBSCRIBING TO INSURANCE

Contacts[2]

In order to get construction insurance from domestic providers, which of the following is the usual contact for the contractors: brokers, agencies, insurers, others? Please list in decreasing order of occurrence:

Professional order

Do the architects, land surveyors or engineers have to register to a local professional order or corporation? Which ones?

Qualification

In order to carry out a construction activity, do the companies need to comply with minimum regulatory qualifications (e.g.: for engineers / architects)?

Type of activity:

Minimum level of qualification:

Name of the diploma:

Other qualifications:

Administrative requirements

In order to operate, do the companies need to register with a competent organization (ex: legal certification for technical inspection activity)?

Schedule

When should the companies contact the insurer in order to subscribe insurance?

Type of cover:

Submission schedule:

Type of cover:

Submission schedule:

Other:

[2] Insurers willing to appear as a contact will be able to register on the single point of contact Elios 2 website

elios 2 European Liability Insurance Organisation Schemes

5 - INSURANCE MARKET

Is there any quantitative information (level of premiums) available specific to the construction insurance market?	☐ There is no national information available ☐ The national insurance federation publishes specific reports on construction - The information is public ☐ / not public ☐ - Some information is available in english ☐ - Website or contact: ☐ Other source of information:
Is there any quantitative information available on the construction market (level of activity)?	☐ The national building federation publishes specific reports regarding: ☐ Eco-technology activities specifically ☐ Small and Medium Enterprise activity ☐ Other: ☐ Source of information (website, journal, federation …):

Cross border Insurance Market	
Do you have insurance requests from foreign companies?	☐ Yes Frequency of occurence:
Have you noticed any competition from foreign insurers operating under the "freedom to provide services"?	☐ Yes Frequency of occurence:
Do you receive requests to cover your insured companies in other European countries?	☐ Yes Frequency of occurence:
Do you cover them?	☐ Yes Frequency of occurence:

6 - COMMENTS - ADDITIONAL INFORMATION

Appendix - Examples of eco-technologies

Topic of environmental performance	*Examples of eco-technologies*
Energy	
energy performance	1. 'passive house' / 'active house'
usage of renewable energy sources	2. photovoltaic panels (PV's)
	3. wind turbine
	4. solar hot water (SHW)
energy efficient techniques	5. mechanical ventilation with heat recovery (MVHR)
	6. heat pump
	7. domotics, e.g. controls for space heating
thermal insulation	8. insulation made of bio-materials, like natural fibers (hemp)
	9. Cavity wall insulation (CWI)
	10. Solid wall insulation (SWI)
	11. double skin curtain wall / façade
	12. EPS (expanded polystyrene) houses
	13. Vacuum-insulated panels (VIP's)
	14. double glazed windows with evacuated units
other energy conservation techniques	15. passive shading devices (e.g. sun shield)
	16. grey water heat recovery
Water	
water conservation techniques	17. green roof / brown roof
	18. in house water-treatment system
	19. rainwater catchment basins, grey water harvesting
water efficiency/management techniques	20. low-water use appliances, like spray taps, flush toilets
	21. ultra low water-efficient plumbing fixtures
	22. Sustainable urban drainage systems (SUDS)
	23. porous pavements
water metering	24. water leakage detection systems
Minimize pollution	
minimize waste during construction	25. biological waste treatment systems to treat waste on-site
separate/recycle waste	26. composting toilets
	27. waste containers
limitation of emission of CO_2, ozone depleting gases, greenhouse gases	28. ammonia cooling agent in cooling systems
limitation of toxic chemicals	29. low VOC materials (paints, kits, glues)
Protect biodiversity and natural environment	30. roof garden
Minimize the use of resources	
re-use or recyclability of construction works, their materials and parts after demolition	31. metal storage/ shipping containers
	32. aluminium or steel frame components/systems (up to 90% recyclable)
usage of renewable materials	33. wood, bamboo
	34. paper-based (e.g. Warmcell)
minimize materials	35. Bubble Deck floors

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