

# eleanor



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# e-learning and innovation in vocational training for water industries

<http://www.e-leonor.eu>

# About eleanor

As underlined by the European Union within the vision of European Technical Platform WSSTP, the European water sector is highly fragmented: water resources, water supply and sanitation/wastewater have often been managed locally. This fragmentation is an obstacle for developing a research strategy for a competitive water sector. Overcoming this obstacle is one of the priorities for the European water sector. During the last 10 years, a tremendous work has been achieved in order to establish a coherent legal framework at the European scale with a full set of directives dealing with water issues. At the same time, the vocational training has been progressively developed by the private and public sector but with clear priorities on technical evolutions which have emerged in the water sector. The training material actually available is mainly focused on technical aspects but the relation with the legal framework is almost not covered. Very few modules or material are available and are not coherently organized in learning paths or with identified competences for professionals. Today, both private and public sector involved in the water field need standardized and harmonized learning/training material to be integrated within vocational training programs.

The eLEANOR project, lasting for two years from October 2010, aims to cope with these problems by improving the training in the water sector through the optimisation and standardization of the learning processes and pathways, also with the help of e-learning facilities and transfer of Good Practices.

This second Newsletter shows the first output of the project, as well as the following steps to be taken in order to succeed in designing the future's professional learning pathways. For those interested in further information, please don't hesitate to contact the eLEANOR Project Office (see the back cover).

## About the project

eLEANOR is an initiative co-funded by the LLP – Leonardo da Vinci Programme, dealing with vocational training for professionals of EU water industry and services in private and public sectors.

The project aims at improving the training in the water sector through the optimisation and standardisation of the learning processes and pathways, also with the help of e-learning facilities and transfer of Good Practice.

eLEANOR is also performed in compliance with the European Credit System For Vocational Education and Training (ECVET) contributing also to its testing. Learning pathways, addressed to the technicians, engineers and managers of the water sector, are deployed answering the needs of the professionals and through the experiences of the partners, consisting in the main EU water companies, academies and vocational training centres, representing the most important eLEANOR target users. The subject of the training is strictly connected to the new EU context where the water industry has to comply with Directives providing a common framework for the stewardship of the environment as well as social considerations. The Directives aim to improve the quality of the environment, protect human health, rationally use natural resources and promote measures at international level to deal with environmental problems. The imple-

mentation of the new legal framework, above all the Water Framework Directive (2000/60/EC), is a challenge for the water industry. Nevertheless, the identified shortcomings related to training and skill of personnel can hamper such an implementation. eLEANOR focuses on: (1) waste water treatment, (2) water supply, (3) storm water management, reflecting the main demands of skills by EU Directives above.

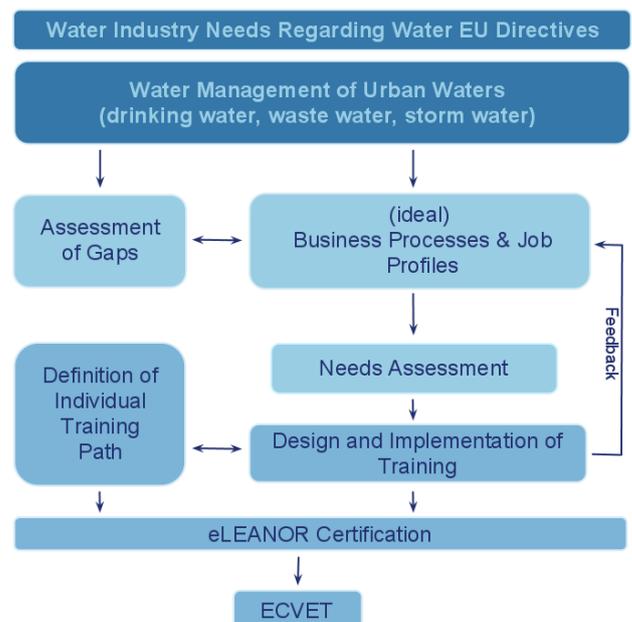
An on-line Course Catalogue will be implemented to collect and rationalise the offer of training material in the water sector by project partners and other course providers linked to them.

The project will allow to define templates for training material, modules and sessions. The general approach will be based on the presentation of the legal texts completed with examples and practical exercises in order to understand concepts and the way to implement them within the daily activities. Each part of the different directives will be linked to practical examples and exercises covering the key aspects of the water Directives and allow partners to identify good practices and share them.

## eLEANOR's methodology

The methodology adopted in this project is rather straight and can be synthesized in the following schema.

The project's feed information is presented in dark blue, the project's work process in cyan, and the project outputs are colored in light blue.



# WP methodology

## Workpackage 2: Assessment on Vocational Training needs for Water Industries

This WP2 aims assessing the training needs, based upon results of the preliminary survey carried out in the proposal phase of this project.

The assessment of training needs is carried out at the level of eLEANOR partners, specially the industrials ones, investigating about their requirements for training in water sector. The training needs will be assessed according to the considered categories of professionals in water industry and to the topics of interest dealing with the implementation of EU Directives on waste water management, water supply and storm water management. Upon the results of the survey, this WP2 also aims drafting the Curricula for all the 3 categories of water industry professionals considered by the project (technicians, engineers and managers) and at validating the outcomes with the help and contribution of industrial partners.

Curricula, moreover, need also to be updated over time and adapted to legislative and technological changes. This implies a continuous monitoring of the context.

Finally, transparency of training offer and compliancy with European Credit System for Vocational Training (ECVET) is also experimented in this WP.

### Goals and Objectives

The main objectives of this WP are:

Assessment of vocational training needs:

- The assessment of needs of water sector at vocational training level is carried out through a questionnaire developed upon the basis of preliminary surveys and investigations performed in the proposal phase. Target addressees of the questionnaire will be potential end users of eLEANOR, training already addressed by other initiatives carried out by the Consortium, such as EuroAqua, Erasmus Mundus, HydroEurope, WSSTP and WATER-GIS Network.
- Curricula design: In this task, eLEANOR curricula is prepared covering topics for different vocational trainings identified. Learning pathways are drafted for Technicians, Engineers and Managers. They define the path to be followed to get specific skills or to move from a level to another and, if possible, from a category to another. Learning paths are also documented through metadata to standardise their description and the available information on them.
- Introduction & Integration of ECVET: Articulation of the reference systems such as ECTS, ECVET and EQF (European Qualification Framework for life-long learning) will be highlighted in the design of eLEANOR curricula, in order to describe qualifications in terms of knowledge modules and units of learning outcomes. Especially ECVET as a technical framework will be used by the certifiers and the training centres to ensure the best comparability and compatibility of units of recognition in different countries as well as to achieve the equivalence and conversion among them.

- Curricula validation: Validated by actual and potential users during the project, to assess and evaluate their consistency with water sector needs for vocational training and their applicability to the labour market. The curricula is submitted for a validation to the industrial partners in the Consortium as well as presented to potential.

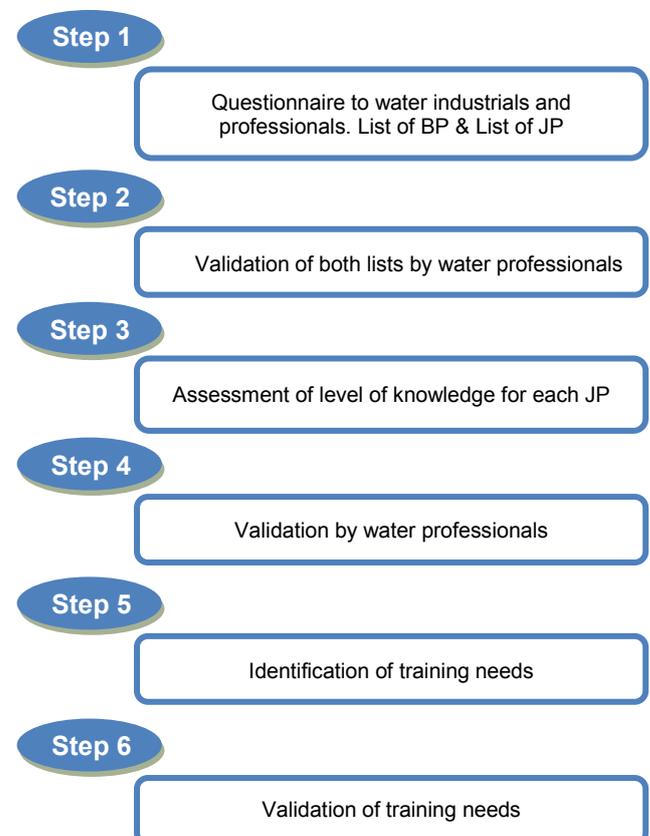
### Methodology of this WP

In order to identify the vocational training needs in the water sector, the first mandatory step is to get the acquaintance of the water business sector.

This WP defines the detailed scope of the project by a deep investigation of the importance of the relationship between a business process and a job profile; covering at the same time the waste water treatment and water supply domain.

The chosen methodology to assess this training need was through a matrix, where the jobs profiles are listed in rows and the business processes in columns and the questionnaire itself consisted in filling the cells with the importance of each job profile with each business process.

In synthetic overview, this WP is resumed in the following scheme:



# BP & JP in the water industry

## Creation of the matrix

A first classification of urban water uses was done, by identifying the existing water business processes and jobs profiles. In order to accomplish this, a common agreement of what is intended by job profiles and business process had to be done. Thus, in this project it is referred to: Job Profile (JP): The outline of the duties and tasks required of and performed by a person for a specific title/job. Business Process (BP): Collection of related, structured activities or tasks that produce a specific service or product (serve a particular goal) for a particular customer or customers. A process is thus a specific ordering of work

activities across time and place, with a beginning, an end, and clearly defined inputs and outputs: a structure for action.

## Compound list of BP and JP

The chosen methodology to assess this training need is through a matrix. As a first step, both JP and BP were listed, and then verified by industrials.

The goal is to investigate the training needs of job profiles in the water domain. Therefore, what is really needed to be asset are tasks – the BPs – in which each job profile participates in. Once this map is done, the training needs come out from the knowledge that each job has to have in order

### Job Profiles

Management	Drinking Water & Resources	Real Time Operations	New Jobs for Env. & QC
Production manager	Network operators	Dispatcher / Control Room Technician	Samples collectors
Distribution manager	DW plant technician &/or operator	<b>Electromech. &amp; pumps</b>	Remote sensors technician
Sewerage manager	DW plant supervisor	Electromecanich Technician	<b>Projects</b>
Customer manager	DW plant manager	Head of maintenance team	Project technician
Finance manager	Leak detection technician &/or operator	<b>Automation</b>	Project engineer
HR manager	<b>Water Meters</b>	Automation engineer	<b>TSE</b>
Logistic manager	MMR and AMR fitters	Instrumentalist	Resource & Emt TSE
Commercial manager	Meter readers	<b>Lab</b>	DW Quality TSE
Contract manager	Meter bench specialist	Water quality lab technician	DW Network TSE
Quality Prev. Env. & pro-	Meter park manager	Head of the lab	WW treatment TSE
Asset manager	<b>Waste Water</b>	<b>Connections &amp; site works</b>	WW network TSE
Technical manager	WWTP technician and/or operator	Works foreman	SW TSE
Research manager	WWTP supervisor	Field work planner / coordinator / scheduler	
Innovation Manager	WWTP manager	<b>GIS</b>	
Communication manager			
Health and Safety manager			
Crisis manager	Camera operator	GIS technician	
Marketing manager	Network inspection technician	Head of GIS team	
	Cleaning operator		

### Business Processes

Asset Management	Lab & QC for DW, WW	Water Primary netwk mngt & water balance	SW netwk mngt
Field interventions (W&WW) mngt (incl. connections)	Automation & Sensors (DW, WW and ENV)	Water Secondary netwk management	WWTP Management
Field works (DW&WW) incl. Connections	Real Time netwk mngt (DW, WW & SW)	Leak detection	Sewer inspection and sewer cleaning
Use of GIS	Planning and Design of New Assets & Plants	Meter reading (AMR E MMR)	Crisis Management
Maintenance of GIS	Water Resources Management	AMR E MMR management	
<i>Mngt of Plant maintenance</i>	ENV monitoring	Public Service Contract Management	
Electromech. maintenance in	DWTP Management	WW network management	

## Some significant descriptions of BP & JP

As an example of the descriptions done the following BP and JP are defined:

### **BP: Asset Management**

The aim of this BP is the definition of the best way of keeping the physical assets of a water company in the appropriate condition, enabling a permanent service, compliant with the contracts and the regulations.

In other words, the target of Asset Management is in finding the appropriate balance between two risks: the financial risk of spending too much and the technical (or contractual) risk of spending too little.

The core activity of the A/M BP is the design of the (annual or medium-term) policy of :

- capital investment;
- rules of maintenance;
- and, sometimes, principles of operation and/or purchase guidelines.

A/M BP also includes the checking of the application of the policy.

The main steps of the A/M BP are:

- knowledge of the "rules of the game" = contract, regulations, internal procedures, etc;
- knowledge of the assets and of their conditions;
- follow-up of the performances of the assets (i.e. compliance with the "rules of the game") - "performances" are assessed on various levels: technical, financial, environmental, etc;
- assessment of the risks, i.e. performances in the future;
- definition of the acceptable level of risk;
- design of policy (capital investment, maintenance) => definition of "projects";
- "sponsorship" of projects (incl. studies) - from launch to acceptance and commissioning.

It must be noted that, even if the following tasks are clearly strongly related to the Asset Management business process, they are NOT INCLUDED in the BP strictly speaking:

- field / plant interventions -- for condition / performance assessment as well as for repairs;
- projects / studies;
- construction / rehabilitation works.

### **JP: Drinking Water Plant Technician**

Duties: Verification of operational settings for factory and making of adjustments: Tests, participation in treatment tests, data entry, updating of operations documents. Carrying out reparation works: diagnostic of breakdowns, interventions of mechanics, general upkeep, updating of operations documents. Carrying out of standard operations: washing of filters, preparation of reagents.

Level of training: Basic education level.

## Training good practices call

The purpose of eLEANOR about "Good Practices" is to collect and share training experiences associated with Business Processes (BPs) in the Water sector.

The aim is to collect (via a template defined for standard description) any training practice considered useful to be shared both from the partners of the project and from interested stakeholder that will be invited to join the eLEANOR Community.

The collection of practices should be addressed to the training experiences related to the BPs identified by the project partnership (as listed in the previous article).

In describing the practices it also has to be considered the Job Profiles involved in the addressed BP (see the JPs indicated in the table on previous page).

The template offer as well the possibility to indicate specific training actions adopted, if any, considering the final goal of eLEANOR, that is devoted to the training of different professional categories in the water sector.

The Good Practices will be then collected in a Catalogue available via the project website. The Catalogue is a living inventory updated with the progress of the project. It will make available a meaningful information and will represent a tool to exchange information across Countries and organisations, in this way promoting the participation of a wide audience of stakeholders wishing to share their own training experience in view of a eLEANOR Community.

If you are interested in sharing training practices please contact the project coordinator. Contact details in the back cover page.



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