

# Master Course on water systems management

May 17-18-19, 2017, Ravenna (IT)

Marco Fantozzi organized the Master course in collaboration with Labelab, Un. Ferrara, Un. Perugia e DHI. More info available at: [www.labelab.it/ravenna2017/sistemiidrici/](http://www.labelab.it/ravenna2017/sistemiidrici/)

## Promoters



The **Master Course on water systems management** has just been completed in Ravenna (IT) from May 17 to 19, 2017 in collaboration with LABELAB (Contacted with the Environment). The training saw the participation of 50 participants from Italian water utilities and 15 international experienced speakers from 5 countries (Italy, Switzerland, Holland, England and New Zealand).

**Aim of the Training:** To provide a technical-scientific and regulatory update on issues related to the management of water networks and the selection and design of efficiency interventions. In particular, specific training was provided on how to practically apply IWA Best Practice Methodology for water loss management (Water Balance, KPIs, night flow analysis, performance evaluation and criteria for selecting and scheduling the most appropriate leakage control activities). The primary purpose of the course was to provide participants with operational tools for water loss monitoring and management, performance analysis, design of optimization interventions. Training also dealt with modeling, which has now become an essential support in water systems design and energy optimization, as well as new ICT-based management technologies. In addition, the course included extensive presentations on pressure management and water loss monitoring. The course was addressed to those interested in developing a concrete professionalism in the field of water management, with particular reference to the staff of the water utilities. At the base of the course, the continuous comparison between trainers and participants. The course participation assigned 19 CP (professional credits) for Italian engineers.

**Training outline:** Fifteen internationally renowned experts participated as trainers as outlined below.

**DAY 1** saw the introduction by **Marco Fantozzi** (Studio Marco Fantozzi and IWA's Water Loss Specialist Group Europe Reference) of course aim and content including: an update on current technical developments at international level and the presentation of international best practice methodologies for managing Non-Revenue water, presentation of EU Reference Document: Good Practices on Leakage Management, introduction to IWA Water Balance, KPIs, and water loss management activities plus latest Leakssuite initiatives on WLM. Then Prof. **Marco Franchini** and Prof. **Stefano Alvisi** (A Ferrara) presented basic know-how needed for building water networks models and their use for designing DMAs and managing pressure. **Francesco Calza** (IRETI) and **Manuela Pedroni** (Tea Acque) presented case studies on advanced pressure management as well as opportunities for financing water loss management activities under current water regulation in Italy. Prof. **Alessandro De Carli** (AquaLAB Foundation and CERTeT-Bocconi) presented investments to reduce losses as internalization of environmental costs and resources. Presentations were followed by questions / answers sessions and a wide discussion of the lessons learned in the case studies presented.



Eng. Marco Fantozzi introduces the contents of the Course.

**DAY 2** saw the presentation by **Marco Fantozzi** of leak detection technologies and their ideal field of application according to guidelines developed by IWA WLSG. Subsequent insights on emerging technologies for large-diameter pipeline control and on condition assessment were provided by international experts such as **Sami Dahmani** (Pure Technologies, Switzerland), **Karel Goorts** (Echologics, The Netherlands). Then **Luke Hart** (Servelec, UK) dealt with Asset Management and Investment Planning. Later **Marco Fantozzi** introduced the participants to the benefits of applying pressure management while Prof. **Silvia Meniconi** (Un Perugia) described the use of pressure reducing valves for water management and talked about diagnosis of water systems by means of transients analysis. In the afternoon **Davide Persi** (DHI) presented case studies in Italy and abroad with application of advanced modeling and water loss management software as well as the integration between hydraulic modeling and GIS for water management. **Luigi Parodi** and **Enrico Ferrari** (ElettroGreenPower), respectively, presented White Certificates to support the optimization of water systems and "Data analytics" as a tool for improving performance and identifying anomalies in water systems. Presentations were followed by extensive discussion on how to benefit from ideas, tools and technologies presented.

**DAY 3** saw the presentation by **Marco Fantozzi** on apparent losses management technologies and methodologies with introduction to the recent IWA WLSG Guidance Notes on Apparent Losses and Water Loss Reduction Planning. To follow **Alessandro Senatore** (Maddalena) spoke about meters for domestic and commercial users with updates on measurement technologies and regulatory compliance for the water utilities; then presenting some experiences in implementing AMR and IoT solutions for water management. **Simon Bunn** (SUEZ, New Zealand), a senior energy optimization expert, presented the principles and benefits associated with real-time pumping optimization solutions. Then **Mario Giacobbo Scavo** (Value Services) presented available financial instruments dedicated to support the application of innovation in the water sector in Italy. The course final session, coordinated by **Marco Fantozzi**, was dedicated to the practical application of the concepts and methodologies presented. The water network of a touristic city on the sea in Tuscany, managed by GAIA, has been analysed, with the involvement of the participants. Analysis of the case

study allowed to define criticalities, calculate the water balance, analyse night flow rates, calculate appropriate performance indicators, and finally define the best strategy for improving performance by indicating the correct sequence of activities to be implemented with an assessment of achievable benefits.

**Interaction and social aspects:** The course format included moments for sharing experience and conviviality which facilitated the exchange of technical experiences between participants in a climate of openness and collaboration. This is also thanks to the fact that the course was part of the EVENT: LABELAB "Make the Counts with the Environment", taking place in the wonderful historic center of Ravenna with the involvement of local institutions providing the halls of ancient city palaces for the training activities.



Mario Giacobbo Scavo, Simon Bunn and a Course participant during a break.



Dinner on May 18 with music entertainment for participants to LABELAB events at Passatelli Restaurant in Ravenna

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**Some feedback from the participants.**

*Congratulations on the initiative! It was an important, useful and interesting moment for comparison.* Manuela Pedroni, TEA

*Excellent opportunity to compare experience with managers, consultants and research institutes.* Niccolò Ranzato, ETRA

*I really want to thank you for the content of Ravenna's course on water management. Very interesting topics, right degree of insight, very good and very experienced speakers.* Iacopo Totaro, Free Professional, Prato

*The course was interesting and made me understand what direction to undertake to manage water losses in my company.* Carlo Foroncelli, Garda UNO

*This course is the basis for a correct and efficient management of the water cycle. All managers should go in this direction and get out of the emergency logic.* Simone Bardini, Garda UNO

*Enriching course for both the topics discussed and for the possibility of a comparison with other utility technicians.* Alessandro Galli, Aquaseprio

*A concrete and clear course on topics that were of interest to me.* Serena Fracchia, MM

*Great course, I do not know what to improve.* Pietro Cacchioli, Mountain 2000

**100% of the participants' comments recommend participating in the course!**

**See you at next edition of the Course – Ravenna, 16, 17, 18 Maggio 2018**

**Eng. Marco Fantozzi (co-ordinator Master Course on water systems management)**