

INVESTMENT FACT SHEET

Output O.I5.1.1, Analytical inspection potential of Vodovod Zadar (HR) Version 2

Project index number and acronym	AMIIGA CE32
Responsible partner (PP name and number)	Vodovod d.o.o. Zadar, (Water supply company Zadar), PP12, VZ
Linked to pilot action (number and title)	Pilot Action 1: Bokanjac-Zadar Functional Urban Area
Project website	https://www.interreg-central.eu/Content.Node/AMIIGA.html
Delivery date	03.2019

Description and technical characteristics of the investment

Within AMIIGA project, the planned acquisition of photometric analyzer for automated simultaneous analysis of selected parameters from multiple samples and gas chromatograph.

During the 2nd (01.03.2017 - 31.08.2017) reporting period we purchased "Photometric Analyzer for Simultaneous Measurement from a Sample"(Discrete analyzer). The analyzer provides an integrated platform for two metering, photometric and electrochemical (ECM) techniques that can be run in parallel. At the same time, determining several analyzes from a single sample and many automated features ensures effectiveness in the analysis. A ready-to-use reagent kit eliminates long-lasting reagent preparation, allowing for additional cost savings. A discrete analyzer is used daily in a chemical laboratory for checking chemical indicators of the health of water for human consumption. Some indicators are determined on a daily basis, while some are determined periodically. Indicators are determined simultaneously, which shortens the time required for the analysis. A small sample volume is required for the analysis, which simplifies sample preparation. In analysis, the factory prepared reagents are used, which ensures high precision and precision in the determination. For now, the instrument can be used to determine 13 different chemical indicators. For some indicators several analytical methods have been introduced, depending on the examined concentration range.

Gas chromatograph (GC) is an analytical instrument that measures the composition of different components in the sample. The gas chromatograph is called gas chromatography.

Principle of Gas Chromatography: The sample injected into the instrument enters the gas stream to transfer it to

the separating tube called the "column". (As the so-called gas carrier, helium or nitrogen is used.) Different components are shared within the column. The detector measures the amount of components leaving the column. To measure the sample of unknown concentrations, a standard sample of known concentrations is inserted into the instrument. The standard retention time of the sample and the surface are compared with the test sample and its concentration is calculated.

Investment costs (EUR) including a break-down of main cost items

Within AMIGA project, the planned acquisition of photometric analyzer for automated simultaneous analysis of selected parameters from multiple samples and gas chromatograph.

Photometric Analyzer for Simultaneous Measurement from a Sample(Discrete analyzer):

The name of the bidder: KOBIS d.o.o.

The head office: Zagreb, Ulica Ede Murtića 7

National Identifying Number: 14804533947

Price without VAT: 39.112,29 EUR

The analyzer provides an integrated platform for two metering, photometric and electrochemical (ECM) techniques that can be run in parallel. At the same time, determining several analyzes from a single sample and many automated features ensures effectiveness in the analysis. A ready-to-use reagent kit eliminates long-lasting reagent preparation, allowing for additional cost savings.

Gas chromatograph (GC)

The name of the bidder: SHIMADZU d.o.o.

The head office: Zavrtnica 17, 10000 Zagreb

National Identifying Number: 16214531266

Price without VAT: 29.482,08 EUR

Gas chromatograph (GC) is an analytical instrument that measures the composition of different components in the sample. The gas chromatograph is called gas chromatography.

Principle of Gas Chromatography: The sample injected into the instrument enters the gas stream to transfer it to the separating tube called the "column". (As the so-called gas carrier, helium or nitrogen is used.) Different components are shared within the column. The detector measures the amount of components leaving the column. To measure the sample of unknown concentrations, a standard sample of known concentrations is inserted into the instrument. The standard retention time of the sample and the surface are compared with the test sample and its concentration is calculated.

Investment location

NUTS 3	Address (Street, house number, postal code, city, country)	GPS coordinates
HR033, Zadarska županija	Put vrele bb, 23000 Zadar, Croatia	44° 09'55.1"N 15° 15'38.3"E

Duration and process of investment implementation

Start date	End date
09.2016	03.2019

Major milestones of investment implementation

Advantages of photometric analyzer and GC is possibility of determining a wide range of inorganic and organic substances in water (cations, anions, petroleum derivatives, polycyclic aromatic hydrocarbons, etc.), shorter time of analysis, less reagent consumption, waste after analysis is minimized, the possibility of finding new potential pollution. Main benefit for Water supply and the city of Zadar is information on sources of pollution that will improve the management of water resources. In the case of an incident situation exceeding the permissible concentrations of harmful substances, intervention measures for rehabilitation will be provided. Improvement of the quality of groundwater and ensuring health-friendly water for human consumption.

Ownership and durability of the investment (e.g. maintenance, financing)

Investment is located on area owned by Vodovod Zadar. Vodovod Zadar is responsible for retain ownership of the investment after the end of the project. After project the investment will be used for common water analysis and to perform actions with water safety. The equipment will become a part of Vodovod Zadar water laboratory monitoring system. Vodovod Zadar is responsible for maintenance of investment. Durability of investment will be ensured by Vodovod Zadar. All necessary service action as well as all consumables for proper use of chromatograph will be covered by Vodovod Zadar, as described investment will become a part of water monitoring system.

References to related pilot action (output fact sheet) and relevant deliverables (e.g. pilot action report, studies) and web-links.

If applicable, additional documentation, pictures or images to be provided as annex

Annexes:

1. D.T2.1.1 Report from_ compilation
2. D.T2.1.2 Report on selecting and developing appropriate numerical model
3. D.T2.1.3. Solution of the inverse problem
4. D.T2.1.4. Final report with suggestion
5. D.T2.8.1. Report Pilot Action FUA Zadar
6. Pictures of equipment

Web links:

<https://www.interreg-central.eu/Content.Node/1.-Report-Pilot-Action-Zadar-FUA-2.pdf>

<https://drive.google.com/drive/u/1/folders/0B1ady7gFIJszUUdXcUd1WTJhX28>

file:///C:/Users/ante/AppData/Local/Temp/Temp1_presentation_amiiga_wednesday.zip/AMIIGA%20-%20final%20brochure-LR.pdf

<http://interreg-central.eu/Content.Node/AMIIGA.html>

<https://www.vodovod-zadar.hr/amiga-2/>

<https://www.voda.hr/en/node/3844>

<https://www.zadarskilist.hr/clanci/09042019/eu-projekt-amiiga-udio-zadarskog-vodovoda-u-projektu-iznosi-786000-kuna>