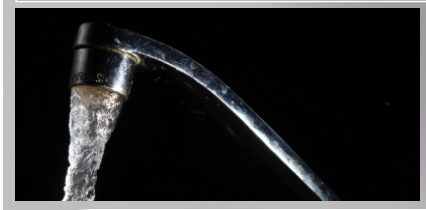
Security and decontamination of drinking water distribution systems following a deliberate contam

Project n° 217976

SecurEau Drinking Water



http://www.secureau.eu/

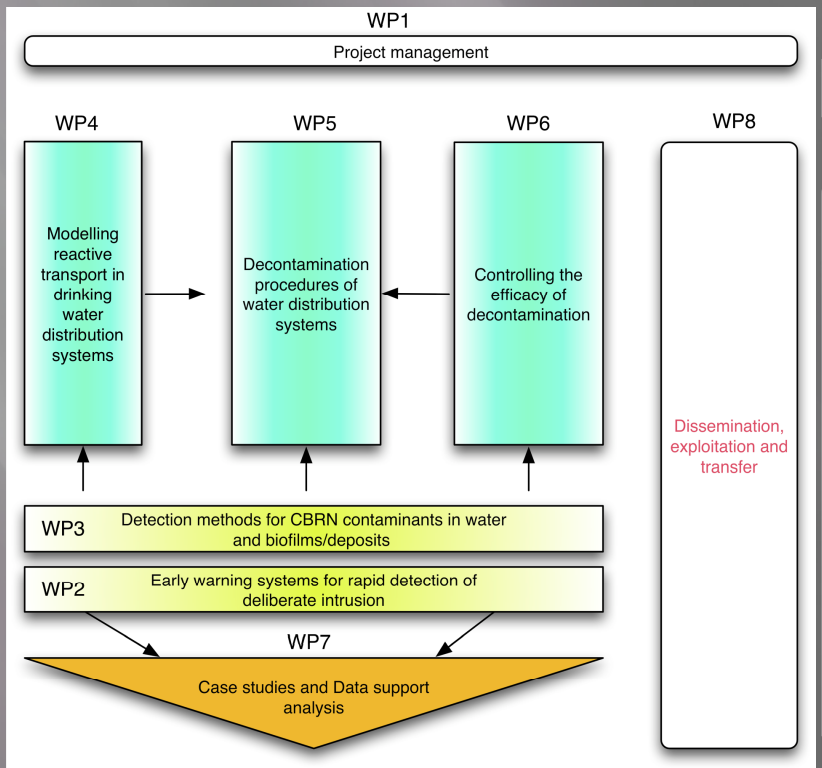
SEVENTH FRAMEWORK PROGRAMME

Contamination of drinking water distribution systems with CBRN as a result of malevolent acts of sabotage represents one of the major challenge that security has to face with. As a consequence, the detection of water quality deterioration in drinking water distribution systems requests new, sensitive and rapid methodologies (*de facto* combining generic cheap unspecific sensors for detecting unexpected quality variations, and rapid specific analytical methods). At last, operational procedures for decontamination of water infrastructures are needed to restore quickly the functionality of the distribution system after deliberate contamination.

In the SecurEau programme we have recognized pipe wall / biofilms / deposits as crucial zones of deliberate contaminants accumulation which limit the success of easy detection, rapid intervention and efficient cleaning. Sorption to / desorption from pipe walls and deposits do control the dispersion and accumulation of contaminants throughout the network, and to the consumers. Then detection and curative treatments will concern pipes, water bulk and deposits.

Objectives

- Design of methodologies to identify new relevant contaminants
- Modelling the distribution of the contaminants and identification of the origin point of the contamination
- Adaptation and integration of various sensors in a surveillance system in an optimal configuration
- Development of methods to decontaminate polluted drinking network and installations.



Expected impacts

- Identification of relevant contaminants in complex matrix (water, biofilm)
- Identification of the contaminant source and definition of the areas contaminated
- New multi-parameter sensors
- Design of the optimal sensors configuration in the distribution network
- New methods to decontaminate polluted installations including an integrated approach to neutralise water and residues.

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