

SecurEau—Security and decontamination of drinking water distribution systems following a deliberate contamination

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Emergency preparedness authorities and security scientists have identified drinking water distribution networks as a conceivable target of a deliberate, malevolent attack. In any event, disruptions in water distribution associated with damages in network structures incur discomfort and expenses. In worst case, agents that are injurious to health are used for contaminating water. SecurEau project addresses this issue by studying CBRN (Chemical, Biological, Radiological and Nuclear) agents.

STUK is one of the 12 European partners presently involved with the project. The main objective of SecurEau is to launch an appropriate response for rapidly restoring the use of the drinking water network after a deliberate contamination, specifically by:

- designing methods for identifying potential contaminants,
- modelling distribution of the contaminants inside the network,
- adapting and integrating various sensors in a surveillance system in an optimal configuration, and
- developing methods for decontaminating polluted drinking water networks and installations including neutralization of contaminated water and residues.

Investigation into adsorption/desorption of radionuclides carried out by STUK has given more insight into behaviour of radionuclides inside a distribution network. The chemical cleaning experiments carried out on laboratory scale have been encouraging—we have been able to efficiently decontaminate water pipe materials exposed to radionuclides with inexpensive and non-toxic chelating agents. A rapid screening method for detecting alpha-active radionuclides in water and biofilms has been validated. An overview of the outcomes and implications of our work will be discussed.

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