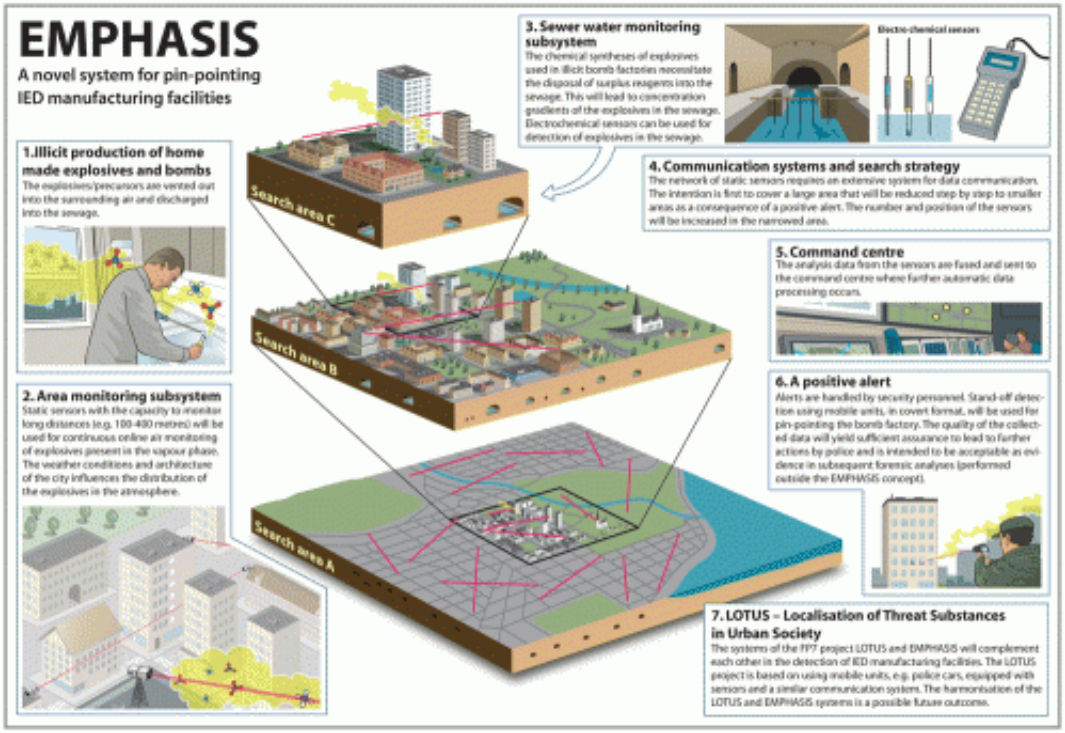
Project turns to sensors in sewers to catch bomb-makers

November 3 2013, by Nancy Owano



(Phys.org) —A European research group has an answer for catching people who aim to make explosive devices at home. Waste products that go down the drain deliver clues. Sensors that can identify these ingredients and sound an alarm are the solution, Bomb-making residue in city sewers may be an important signal for finding bomb-makers out, thanks to special sensors placed in sewers. A project called EMPHASIS

aims to do just that. Emphasis is an EU-funded project of team members who are working on a method of sniffing out home-made bomb setups through chemical sensors placed in city sewer systems. Under the scenario, if the sensors do find traces of explosives, an alarm is sounded, and a special police team swings into action with a with a high resolution sensing unit, conducting a search to pinpoint the site.

The sensors are designed to pick up signs of the precursors of dangerous explosive devices, such as reagents and reaction-breakdown products.

The concept targets those who try to make explosive devices with use of their private kitchens or bathrooms, where ingredients dumped down the drains through toilets, sinks, and tubs leak into the sewers. Substances of a threatening nature, once detected, become registered information sent to a command center.

This concept is being explored in an EU-funded project called Emphasis. According to its project page, its reason for being is the detection of production of explosives. Nine project partners are carrying out work for such a system, The name Emphasis stands for Explosive Material Production Hidden Agile Search and Intelligence System, which further explains its mission. That mission is to test a system concept for the purpose of detecting the illicit production of explosives and improvised explosive devices (IEDs) in urban areas.

Hans Önnerud, a research scientist, is the project manager. Onnerud is with the Swedish Defense Research Agency (FOI) in Sweden, one of Europe's research institutes for defense and security. According to a report on Friday in *New Scientist*, an Emphasis project presentation was delivered at last month's International Symposium on the Analysis and Detection of Explosives (ISADE) in The Netherlands, where Onnerud's team said their tests in the lab were successful. The Emphasis sensors were developed and tested on faeces-rich wastewater in the lab and will

be tested in sewers next year.

Last year, FOI exhibited five projects that FOI was coordinating relating to preventing the manufacture of home made bombs, the location of bomb factories, the neutralization of improvised explosive devices (IEDs) and the development of new methods for a forensic analysis of a bombing scene, at the trade fair Security Essen, in Germany. A bomb sniffer sensor was one of the projects showcased as well as a biodetector based on honey bees for the detection of explosives.

More information: www.newscientist.com/article/m … bombs-and-drugs.html

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